

Examination of the Historical Sensemaking Processes Representing the
Development of Knowledge Management Programs in Universities:
Case Studies Associated with an Emergent Discipline

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by

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Dedication

This dissertation could not have been completed without the commitment, contributions, dedication, interest, love, and patience furnished by my wife and best friend, **Louise R. Levergneux**. Between 2000 and 2007 my wife took on the status of *doctoral student widow*. Anyone who has tried to complete a PhD will know what that meant—the brooding silence, unanswered questions, late nights alone, tired looks, severe glances, impatient responses, and overall foul personality. There were some hard times during those seven years, but Louise followed me to Kent, Ohio (USA), from Ottawa, Ontario (CANADA), and stayed with me. She spent much of her time training our beautiful Sheltie, Imperial Topaz, while keeping our home in order, looking after the bills, cooking meals, creating and marketing her artists' books, and continuing her professional work as a visual artist. I look forward to spending more time with her and Topaz and repay them with a more pleasant personality and increased sense of humour once I have my time back from this life-changing endeavour.

“WISDOM, like an inheritance, is a good thing and benefits its possessor ... Wisdom is a shelter as money is a shelter, but the advantage of knowledge is this: That wisdom preserves the life of its possessor ... Wisdom makes one wise person more powerful than ten rulers in a city ... Whatever wisdom may be, it is far off and most profound—who can discover it? So [we turn our] mind to understand, to investigate and search out wisdom and the scheme of things ... Adding one thing to discover the scheme of things. ... Who is like the wise person? Who knows the explanation of things? Wisdom brightens a person's face and changes its hard appearance.”
—(Ecclesiastes 7:11- 8:1)

“Grand Architect of the Universe, show us how to take our lives in their rude and natural state and dress, square, and polish them so that we might become disciplined, educated, and wise. Keep us everlastingly at the task of self-mastery. Enable us to uncover the Perfect Ashlar within us by removing the superfluous material which encrusts our lives. Teach us how best to perfect our spiritual edifice. Amen.”

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List of Abbreviations

ACRONYM	EXTENSION
ACRL	Association of College & Research Libraries
AIIM	The Enterprise Content Management Association
AIS	Association for Information Systems
ALA	American Library Association
ALIA	Australian Library and Information Association
ALISE	Association for Library and Information Science Educators
AMHER	American Heritage® Dictionary of the English Language
AOM	Academy of Management
ARMA	Association of Records Managers and Administrators
ASIST	American Society for Information Science and Technology
BAILER	British Association of Information and Library Education and Research
BOK	Body of Knowledge
BPR	Business Process Reengineering
CAIS	Canadian Association for Information Science
CAS	Complex Adaptive System
CIS	Computer Information Systems
CKC	Choo's <i>Knowing Cycle</i>
CKO	Chief Knowledge Officers
CLA	Canadian Library Association
COI	Communities-of-Interest
COP	Communities-of-Practice
CRC	Curriculum Review Committee
CRM	Customer Relationship Management
CS	Complex Systems
CT	Complexity Theory
DA	Dissertation Abstracts
E&Y	Ernst and Young
EMKM	Executive Master in Knowledge Management
FGKM	First Generation Knowledge Management
FIS	Faculty of Information Studies
GC	Graduate Certificate
GD	Graduate Diploma
GKEC	Global Knowledge Economics Council
GSLIS	Graduate School of Library and Information Studies
HRM	Human Resources Management
IAI	Information Architecture Institute
ICAS	Intelligent Complex Adaptive System
ICLISE	International Conference for Library and Information Science Educators
ICRM	Institute of Certified Records Managers
ICT	Information, Communications, and Technologies
IDC	International Data Corporation
IFLA	International Federation of Library Associations and Institutions

List of Abbreviations

ACRONYM	EXTENSION
IKM	Information and Knowledge Management
IKMI	International Knowledge Management Institute
IKMS'99	International Knowledge Management Summit, 1999
IM	Information Management
IRMA	Information Resources Management Association
IS	Information Services
ISAT	Integrated Science and Technology
IT	Information Technology
KIMPS	Knowledge and Innovation Management Professional Society
KLC	Knowledge Life Cycle
KM	Knowledge Management
KMC	Knowledge Management Centre
KMCI	Knowledge Management Consortium International
KMI	Knowledge Management Institute
KMPro	Knowledge Management Professional Society
KPM	Knowledge Process Management
LA	Library Association (of the UK)
LIANZA	Library and Information Association New Zealand Aotearoa
LIS	Library and Information Science
MA	Master of Arts
MA in ED	Master of Arts in Education
MBA	Master of Business Administration
MBO	Management By Objectives
MIS	Management Information Systems
MKM	Master of Knowledge Management
MLA	Medical Library Association
MLIS	Master of Library and Information Science
MS or MSc	Master of Science
MS in ED	Master of Science in Education
MS in KM	Master of Science in Knowledge Management
MSW	Master of Social Work
NAS	Non-Adaptive System
OB	Organizational Behaviour
OC	Organizational Communications
OD	Organizational Design
OECD	Organization for Economic Cooperation and Development
OEDO	Oxford English Dictionary Online
OL	Organizational Learning
OP	Organizational Psychology
PDC	Program Development Committee
S/PEA	State/Provincial Education Authority
SAS	Simple Adaptive System

List of Abbreviations

ACRONYM	EXTENSION
SGKM	Second Generation Knowledge Management
SIM	Society for Information Managers
SLA	Special Libraries Association
SOL	Society for Organizational Learning
ST	Systems Thinking
TNKM	The New Knowledge Management
TQM	Total Quality Management
US DON	US Department of the Navy
UT	University of Toronto

Abstract

The purpose of this qualitative study was an investigation of the phenomenon of Knowledge Management (KM) program design and development. The interest in KM programs has grown during the last decade because of the increased demand for KM educational research and the importance of the emerging knowledge economy. This exploratory and explanatory investigation scrutinized two cases of graduate KM programs conceived in the year 2000.

Choo's Knowing Cycle was the conceptual framework for the study and furnished an interpretive structure for the data in terms of various processes: historical sensemaking, knowledge creation, and decision-making. Two methods were used for data collection: document analysis and structured interviews with fifteen informants—ranging from deans and directors to Advisory Board members and program support staff. Grounded theory was the analytical method used.

The findings reveal the struggles amongst diverse educational program stakeholders. The teams responded to the challenges of ambiguous frameworks, contradictory opinions from experts, inconsistent definitions, and untested learning outcomes. The results include a valuable repository of provisional Bodies of Knowledge, courses, definitions, frameworks, learning outcomes, and position profiles. The major conclusions were that: 1) the programs were triggered by the need for generating new revenue streams at the educational institutions; 2) deep knowledge about KM was not necessary in order to design and develop an educational program; 3) the two institutions established KM programs because of passionate leaders and teams, group and personal agility and self-learning, innovative and creative curricula; 4) librarians and information professionals played a pivotal role in conceiving, designing, and developing the programs; and 5) KM did not exhibit the characteristics of a mature field with the experiences represented by these two cases.

Abstract

The significant contribution was the discovery of new, previously unknown knowledge about the inner workings of KM educational program design and development. Leaders of schools of Business, Library and Information Science (LIS), and Management could benefit significantly from the results if they wished to reduce the “time and cost to market” of a KM program. Increased involvement by LIS faculty could boost the relevance and relationship of the LIS field to KM education.

Résumé

Le but de cette dissertation était l'étude du phénomène de création et de développement de programmes de gestion des connaissances (GC). L'intérêt pour les programmes de gestion des connaissances a augmenté au cours de la dernière décennie face à la demande de recherche en éducation de gestion des connaissances et à l'importance de l'émergence de l'économie du savoir. Cette recherche exploratoire et explicative examine deux programmes d'études supérieures en gestion des connaissances conçus en l'an 2000.

Le modèle théorique du cycle du savoir de Choo a été utilisé pour cette étude et a fourni une structure d'interprétation pour les données en terme de divers processus: la signification historique, la création du savoir, et la prise de décision. Deux méthodes ont été utilisées pour la collecte des données, soient l'analyse de documents et l'entrevue structurée avec quinze informateurs: du doyen aux présidents et membres des commissions consultatives au personnel de soutien des programmes. La Grounded Theory a été la méthode analytique utilisée.

Les résultats ont révélé une concurrence entre les diverses parties impliquées dans les programmes d'éducation. Les équipes ont répondu aux défis suivants: cadres d'applications ambiguës, opinions contradictoires provenant des experts, définitions inconsistantes et analyses des résultats d'apprentissages non vérifiés. Les résultats font état d'un répertoire des corps de connaissances provisoires, des cours, des définitions, des plans, des résultats d'apprentissages et des profils des postes. Les conclusions principales sont les suivantes: 1) les programmes furent déclenchés par le besoin de générer de nouveaux flux monétaires vers les établissements d'enseignements; 2) une connaissance approfondie de la GC n'était pas nécessaire pour concevoir et développer un programme d'éducation; 3) les deux institutions ont développé des programmes en GC grâce à la passion et l'implication des dirigeants et des équipes, à l'habileté et l'autoformation personnelle et de groupes, et à l'innovation et la créativité des curricula; 4) les bibliothécaires et les professionnels de l'information ont joué un rôle essentiel

Résumé

dans la création, la conception et le développement des programmes; et 5) la GC n'a pas démontré les caractéristiques d'un domaine mature suite à l'expérience représentée par ces deux cas.

La contribution essentielle a été la découverte d'un savoir, auparavant inconnu, à propos du travail interne de création et de développement des programmes de gestion des connaissances. Les dirigeants des écoles d'études commerciales, de bibliothéconomie, des sciences de l'information et de gestion pourraient grandement bénéficier d'un programme de gestion des connaissances qui réduirait le temps et le coût. L'implication accrue des professeurs de bibliothéconomie et de science de l'information pourrait augmenter la pertinence et la relation entre le domaine de la bibliothéconomie et des sciences de l'information et celui de l'enseignement de la gestion des connaissances.

1 Introduction

In *The Sciences of the Artificial*, Herbert A. Simon (1981) recognized that:

Everyone designs who devises courses of action aimed at changing existing situations into preferred ones. The intellectual activity that produces material artifacts is no different fundamentally from the one that prescribes remedies for a sick patient or the one that devises a new sales plan for a company or a social welfare policy for a state. Design, so construed, is the core of all professional training: it is the principal mark that distinguishes the professions from the sciences. Schools of engineering, as well as schools of architecture, business, education, law, and medicine, are all centrally concerned with the process of design. (p. 129)

My dissertation is based upon two rich narratives about educational program design associated with an emerging profession called Knowledge Management (KM). The results are a contribution to the body of knowledge about KM and the sensemaking, knowledge creation, and decision-making processes associated with KM educational program design. The faculty, staff, and advisors of the two cases were intimately involved in the conception, design, and development of the KM programs. These *brave pioneers* built the core foundations for KM education and training, and associated cognate fields. This is their story as told to me. It is a critical contribution to the Body of Knowledge (BOK) about KM and KM education.

This chapter reveals the triggers, context, and trends that launched my investigation. My study examines the historical experiences in two institutions of higher education where KM graduate programs were developed. During the late 1990s a selected group of institutional members at these universities attempted to make sense of an emerging phenomenon called KM in order to create KM programs. The organizational processes of program conception, design, and development spawned new knowledge about teaching KM and decisions were made to package this information into a graduate degree in Knowledge Management. Concurrently, the field of KM was itself evolving as a new field of practice and as an emergent academic field of study. The two educational KM programs proposed different and unique visions for teaching KM and conveying KM skills and competencies for application in the workplace.

1.1 Prologue to this Study

Before my journey back to the academy when I launched this investigation, I was a Senior Director in a management consulting firm. I directed a business unit with professionals and staff whose goal was to sell and deliver knowledge management consulting services. At that time I was tasked to make sense of KM and identify the competencies and skills required for my analysts and consultants to be productive at the client site. These professionals needed to develop enough expertise in KM to be useful to the client and justify a worthwhile billable rate—a rather pragmatic business value proposition. The organizations who engaged my teams were interested in learning how KM differed from Management Information Systems (MIS), Information Technology (IT), and Information Management (IM).

Any corporate director faced with figuring out the competencies and skills for upgrading their staff's education and training might simply review the academic and trade journals, websites of professional associations, and relevant university program offerings. It should have been easy to identify the competencies and skills required of a KM professional. However, finding this information in the period of 1995–1999 was not easy. I was faced with a critical obstacle—at that time KM educational programs were virtually non-existent. Those programs that existed were not widely marketed or visible. And, most importantly, KM pundits provided inconsistent definitions, promoted ambiguous conceptual frameworks, reported contradictory research results, and could not agree upon an identifiable Body of Knowledge (BOK).

When I decided to return to graduate school in 1999 to begin my doctoral investigation into KM education, I started my study with a simple observation: *KM educational programs were scarce*. By 2002 I noticed that a significant range of distinct KM-related degrees and credentials were being offered. This situation spawned my primary research question: *How did the academic KM program designers make sense of the emerging field of KM in order to create a program for conveying learning about this new phenomenon called 'knowledge management?'* In fact, it was the warrant proposed by Dunn and Hackney (2000) and bolstered by numerous other researchers that helped me consider

launching this study: “Presently what we can observe is that the teaching and learning of KM is of such significance and interest that deeper pedagogic research is both warranted and worthwhile” (p. 271).

This initial question formed the foundation for a suite of research questions that launched this investigation. Those questions led me to construct a dissertation proposal in 2003. Consequently, through a selective sampling process, I contacted two graduate institutions that had established KM programs a couple of years before my proposal.

Being a practitioner, and somewhat naïve at that time about the inner workings of the academy, I assumed that any range of KM programs offered would have a common framework and a similar level of consistency as, for example, MAs in English Literature, MBAs, MLISs, MSs, or MScs in Physics or Chemistry. My investigation has partially refuted this assumption, since complete consistency across KM educational programs was not evident in the data. More importantly, this study provided information and knowledge about how two KM programs approached the challenge of integrating and synthesizing the divergent sources of information about KM into workable curricula.

1.2 History of Knowledge that Forms the Context to the Problem

Why should academics or practitioners be interested specifically in KM? The foundations for KM appear to stem from the significant work in epistemology by the early fathers of western philosophy, such as Aristotle, Plato, and Socrates. In the *Nicomachean Ethics*, for example, Aristotle described the different kinds of overlapping and interpenetrating knowledge (Aristotle, 1984, Book Z 1139a1- b35), which could be related to modern types of business-related knowledge in terms of (Braf, 2001, p. 6–7):

- *doxa*—opinion,
- *episteme*—scientific knowledge,
- *hypolepsei*—conjectural knowledge,
- *nous*—intellectual reasoning,
- *phronesis*—practical knowledge,
- *sophia*— knowledge of the first principles, and
- *techne*—technical knowledge.

This ancient categorization of knowledge can be hypothetically related to current streams of business knowledge—e.g., business intelligence, publications and documents, decision support systems, policies and business rules, procedures and processes, best practices, intellectual capital (copyright, patents, and trademarks), and academic knowledge. All of these modern types of knowledge are categories that KM practitioners and researchers operationalize in their work.

In *Theaetetus* Plato narrated a question and response between the teacher and a student. Socrates enquired of Theaetetus (Burnyeat, 1990):

Now this is just where my difficulty comes in. I can't get a proper grasp of what on earth knowledge really is. Could we manage to put it into words? What do all of you say? Who'll speak first? (145e-146a)

Later, Theaetetus declared:

Oh, yes, Socrates, that is just what I once heard a man say. ... He said it is true judgment with an account (logos—justified true belief) that is knowledge; true judgment without an account falls outside of knowledge. (201c-d)

Socrates indicated that this response was an acceptable suggestion. Plato's work reflected a continuing struggle with the enigma of knowledge and its source, especially in terms of the Theory of Forms as described in the *Phaedo* (Cornford, 1957, p. 7).

Socrates and Meno wrestled with the definition of knowledge in Plato's *Meno*. Socrates proposed that once true beliefs are "tied down, they first of all become pieces of knowledge" (Plato, 1985, 98b). In another exchange Meno asked:

And how are you going to search for this when you do not have the faintest idea of what it is? Which of the things that you don't know will you suppose that it is, when you are searching for it?" (80d)

Within both cases we have stumbled upon the paradox of Socrates: "If we cannot define knowledge, how will we ever know it when we see it?" Indeed, this is one of the conundrums that stymies many academics and practitioners who are working in the KM field today: "What is knowledge, and if we think we have discovered or captured it, then how do we manage it?"

1.3 From the Ancient Study of Knowledge to the Current Context

From the Middle Ages to post-Renaissance Europe, numerous other philosophers and metaphysicians tried to grapple with the question of knowledge, types of knowledge, and knowing when we had discovered knowledge (e.g., Descartes, Goethe, Hume, Kant, and Locke, to name only a few). More recently, though, modern philosophers like Polanyi and Popper have directly affected many academics' views of KM and they are often cited. The concepts of *tacit* and *explicit knowledge* originated with Michael Polanyi (1966, 1974). *Tacit knowledge* refers to knowledge that is obscure and difficult to articulate—hidden within an ineffable domain. *Explicit knowledge* refers to the formalization of *tacit knowledge* that is conveyed through drawings, language, words, and writings. Polanyi (1997) was quick to point out that our inability to make all *tacit knowledge* (or even a substantial volume of it) into *explicit knowledge* suggests that with *tacit knowledge* “we can know more than we can tell” (p. 136), and more often than not, we cannot articulate very well what we know.

Nonaka and Takeuchi (1995) extended much further Polanyi's original differentiation in terms of *tacit* and *explicit knowledge* (as described in greater detail in Chapter 3). In fact, Wilson (2002a) contended that the “reinterpretation” of Polanyi's concepts of *tacit* and *explicit knowledge* by Nonaka and Takeuchi was blatantly wrong. Wilson proposed that *tacit knowledge* could not be captured or codified, and instead it was the data and information in a message between a sender and receiver that was captured. Wilson contended “[*tacit knowledge*] can only be demonstrated through our inexpressible knowledge and through our acts” (Tacit Knowledge, ¶ 4). Thus, Wilson placed little faith or belief in the ability to convert *tacit* to *explicit knowledge*, and in fact suggested we should use the term *implicit knowledge* to refer to what he felt was a term mistakenly used by Nonaka and Takeuchi—*explicit knowledge*.

On the other hand, in Karl Popper (1972) a proposal for a theory of objective knowledge was advanced. According to Popper, intellectual products were stored in *World 3* of his three-world framework—a world filled with the content of objective thoughts independent of a human host to store it within (not unlike Plato's World of Forms or

Ideas). The proposed knowledge objects encompassed books, models, theories, problems, states, conditions, and opinions. This concept of externalized knowledge was the basis for the range of KM software applications that claim to capture, categorize, and store 'knowledge' for eventual retrieval. In fact the organizational memory management subfield of KM represents billions of objects and thousands of KM systems and applications (Bergman, 2005; Craine, 2000; Dieng, Corby, Giboin, & Ribiere, 1999; Kankanhalli, Tan, & Wei, 2005; Sutton, 1996; Tuomi, 1999–2000; Voss, 2000).

1.4 Challenge Associated with Understanding KM

There is a fear as well as a mystique surrounding the phenomena of KM and the use and meaning associated with the phrase—a kind of boundless ambiguity or contradiction. In Beckman (1999) the definitions of a number of well-known authors are cited to present a range of some of the proposed definitions for KM (p. 1–6):

1. KM is the systematic, explicit, and deliberate building, renewal, and application of knowledge to maximize an enterprise's knowledge related effectiveness and returns from its knowledge assets. (Wiig, 1997)
2. KM is the process of capturing a company's collective expertise wherever it resides—in databases, on paper, or in people's heads—and distributing it to wherever it can help produce the biggest payoff. (Hibbard, 1997)
3. KM is getting the right knowledge to the right people at the right time so they can make the best decision. (Petrash, 1996, October)
4. KM involves the identification and analysis of available and required knowledge, and the subsequent planning and control of actions to develop knowledge assets so as to fulfill organization objectives. (Macintosh, 1996)
5. KM applies systematic approaches to find, understand, and use knowledge to create value. (O'Dell, 1996)
6. KM is the explicit control and management of knowledge within an organization aimed at achieving the company's objectives. (van der Spek & Spijkervet, 1997)
7. KM is the formalization of and access to experience, knowledge, and expertise that create new capabilities, enable superior performance, encourage innovation, and enhance customer value. (Beckman, 1999)

Even now, about 10 years after Beckman's outline of definitions, there are hundreds of new definitions that have surfaced in the literature. In the mid-1990s there were no journals dedicated to KM. Today there are between 30 and 50, depending on how you define the emerging field of KM, and often journals not directly associated with KM publish special issues trumpeting the application of KM within their fields. The trend is

growing to more journals whose primary purpose will be to report on research and the practice of KM.

I have described (Sutton, 2002a) an investigation that identified 79 KM programs in 49 different educational institutions. Today that number appears to have increased by at least 15%. In the last three years I have kept informal statistics on the number of monographs appearing in publishers' catalogues with KM in the title or whose primary/secondary topic is KM. The volumes ranged from an estimated 30 in 2003, an estimated 40 in 2005, an estimated 60 monographs in 2006, and probably over 100 in 2007. During the last three years at least 20 conferences per year offered KM as a concentration, stream, theme, or the primary subject.

Ponzi and Koenig (2002) also reported on a working paper in an issue of *InformationR.net* that described a very interesting hypothesis. The authors proposed that typical management fads last about five years, based upon annual counts of articles retrieved from *ABI Inform*, the *Social Science Citation Index*, and the *Science Citation Index*. The graphing of annual article counts for quality circles, total quality management, and business process reengineering presented evidence to prove their hypothesis. While analyzing KM within this conceptual framework, the authors suggested "that knowledge management has weathered the five-year mark and perhaps is becoming an addition to the management practice" (The Case of Knowledge Management, ¶ 3). This foundational work was later confirmed by Peachey and Hall (2005, January 3–6) and Peachey, Hall and Cegielski (2005).

In addition, the appearance of KM educational programs occurs across a spectrum of undergraduate, graduate, and doctoral programs in:

- Business and Management,
- Cognitive Science,
- Computer Science,
- Computer Systems,
- Information Management,
- Information Science,
- Information Systems,
- Information Technology,
- Library and Information Science/Studies (LIS), and

- Systems Engineering.

KM knows no boundaries, neither academically nor in practice. For example, the KM Concentration within the Information Architecture and Knowledge Management Program at Kent State University combines resources from six schools and departments

(Froehlich, 2003, November 11):

- Communication Studies,
- Computer Science,
- Graduate School of Business,
- Journalism and Mass Communication,
- Library and Information Science, and
- Visual Communication Design.

1.5 Imperative for KM Educational Programs

My literature review in Chapter 2 will detail the struggle by researchers with the question: “What is Knowledge Management?” But this question has yet to be satisfactorily answered. With all of this new and growing information about KM, one would assume the topic of KM education would be comprehensively covered. However, that was not what I found. In fact, I discovered during the course of my study that over the last seven years a number of organizations have offered KM certification in an attempt to establish a society of KM professionals. In 2002 there were four organizations that advertised educational certification programs for knowledge professionals outside of the academic venue:

- *Global Knowledge Economics Council*—GKEC, often referred to as the Knowledge Management Certification Board (KMCB) (Global Knowledge Economics Council, 2002),
- *Knowledge and Innovation Management Professional Society*—KIMPS (Knowledge & Innovation Management Professional Society, 2006);
- *Knowledge Management Consortium International*—KMCI (Knowledge Management Consortium International, 2006); and
- *International Knowledge Management Institute*—IKMI (International Knowledge Management Institute, 2006).

By 2005 KIMPS had been reborn as the Knowledge Management Professional Society (KMPro) and offered a widely-accepted KM certification program. Another organization,

Entovation International (2006), emerged in the marketplace to offer certification of *knowledge innovators* and was the brainchild of Debra Amidon, a well-respected KM pundit. All of the KM certification programs advertise that they facilitate the practical learning associated with KM in business, and some even explicitly suggest that most academic programs may be too theoretical to be useful in the workplace.

The mere survival of some of these organizations suggests that a market for this service continues to exist, especially considering the economic downturn experienced between 1999 and 2006. Regardless, the advertising for these offerings would suggest that they are at least surviving, if not flourishing.

Finally, Dominique Foray is a proponent of a new sub-discipline of economics referred to as the “economics of knowledge.” Foray (2001, 2004) and David and Foray (2002, 2003) described the apparently profound conceptual transformations and structural changes they saw taking place globally. This new field of study is legitimizing the place of knowledge within a new paradigm for something called the *knowledge economy*. Although pragmatists exist as well as nay-sayers, the Organisation for Economic Cooperation and Development (OECD, 2000, 2004a, 2004b) has recently published serious studies and critical research describing the emergence of this economy. The OECD has studied the potentially dramatic effect of the knowledge economy on economic development and education in both the industrialized nations of America, China, European Economic Community (EEC), India, Japan, Southeast Asia, as well as the least-industrialized nations of the third world. UNESCO established the Chair in Knowledge Economy and Management in 2005 at the International Centre of Knowledge Economy and Management of Vilnius University (Lithuania) to promote the study of the knowledge economy.

All the conferences, monographs, periodicals, publications, and related activities suggest an hypothesis: *Something is driving the emergence of an economy based upon knowledge*. A consensus is still lacking of what actually comprises that ‘something.’ If this hypothesis is true, then an investigation of two academic institutions that designed

and developed graduate KM programs is timely. In fact I would argue that such a study will be critical to the success of creating new KM educational programs to support this emergent economic paradigm. Socially, it appears we need some clarity about knowledge as well as a better understanding of the phenomenon of KM itself. The simplicity of a clear definition, and the precision it could afford us, would furnish the opportunity to reinvigorate and focus new KM educational initiatives.

1.6 Problem Statement and Purpose of the Study

Recently Hugh McKellar, the editor-in-chief of *KMWorld* and an internationally respected KM pundit, suggested that: “Viewing KM through academic eyes adds further texture to the debate [on the definition of KM] and the number of well-respected universities offering advanced degrees in knowledge management is steadily growing” (2005, p. 20).

In like manner, another widely respected academic in the fields of LIS and KM, Michael Koenig (2006), referencing his earlier research in Ponzi and Koenig (2002, p. 30) stated:

With four more years of data, it is clear ... that KM is now in a pattern all its own: first the typical four- or five- year burst of explosive growth, but since then a pattern of stable, mature growth—not a pattern of boom and bust, but a pattern of boom and continuity. (¶ 5)

Increasingly during the period between the late 1990s and the mid-2000s many institutions of higher learning began to offer new KM programs to meet the demand in the marketplace for KM-related skills. On the surface the educational programs seemed to lack uniformity and consistency across the numerous institutional offerings. Often, KM courses consisted of existing courses and programs repackaged from current offerings, instead of programs that drew upon unique and original material about KM. The resulting lack of consistency surrounding KM program offerings was the spark for my rationale to explore the study of processes surrounding the architecture of two KM programs.

The purpose of this study was to examine the historical sensemaking processes that occurred in two institutional cases during the conception, design, and development of

graduate programs in KM. The significant challenge for this study was to understand the processes involved during the sensemaking experiences of the institutional members and, to a lesser extent, the experiences associated with knowledge creation and decision-making during the each program's inception. The sensemaking element in my dissertation is timeless, since sensemaking is not historically constrained to a specific period and may be used to replicate or extend further studies of KM education in the future.

The anticipated outcomes of this study will be a clearer understanding of this phenomenon called KM and an insight into the processes and andragogical foundation forming the architecture of an educational program that teaches KM. Based upon the case and grounded theory methods I employed for this *exploratory* and *explanatory* study, I will document critical information about the elements comprising the KM programs in my two cases and propose new research questions about KM educational programs. The new research questions will be derived from the analyses of the events and experiences of the institutional members and the processes of the institutions narrated within each case. The new questions will be useful for guiding further research into educating academics, researchers, and practitioners about KM and its cognate fields.

1.7 Research Questions

Given the lack of clarity surrounding this emerging phenomenon of KM educational program development, I proposed the primary and secondary research questions contained in Table 1-1.

These questions were the catalyst for my exploratory and explanatory investigation that would try to answer the *how* and *what* questions associated with KM programs. The final question was posed to frame the context of my study within the Graduate School of Library and Information Studies (GSLIS) at McGill, where I became a doctoral candidate. After I entered McGill's LIS program, the faculty began to investigate the feasibility and design associated with offering a KM concentration within the Master's program as well its Ad Hoc Doctoral Program. Trying to situate the context of my study

within the ongoing experiences of the faculty and students of the GSLIS made sense to me and my committee.

Ques. #	Research Question
P.1	How did the academic KM program designers make sense of the emerging field of KM in order to create a program for conveying learning about the phenomenon called “knowledge management”?
S.1	What new knowledge may have been created about KM through the program conception, design, and development processes?
S.2	What general learning outcomes were proposed in the KM programs under study to convey learning about KM?
S.3	How has the new knowledge created about KM contributed to the decision-making process for new program development?
S.4	How can librarians and information professionals position their educational programs to appropriately include this emerging field of KM?

Table 1-1 Research Study Questions

1.8 Significance of the Study

The investigation of two KM programs is significant because of the implications for a complex, ever-changing world where new business approaches, practices, and emergent theory can become mainstream in weeks or months, instead of years. KM seems to exhibit those same attributes of complexity and speed to market. The findings of this study provided valuable information that extended our knowledge and understanding of particular elements within KM programs:

- candidate courses,
- candidate BOK material,
- characteristics and learning outcomes of KM curricula,
- conceptual frameworks,
- definitions,
- profile descriptions of the skills and competencies anticipated in a KM program graduate—a Knowledge Manager,
- program development processes and activities, and
- process descriptions associated with sensemaking, new knowledge creations, and decision-making.

This investigation is a significant contribution to understanding KM education because it complemented known research initiatives. The scarcity of current research material provided an imperative for exploring KM program design and development. The study brought a number of areas to the surface that could be the basis for further study of KM programs, including: barriers, best practices, lessons learned, problems, solutions, and triggers. The investigation uncovered a rich base of data, information, and consequent knowledge surrounding the activities and processes that occurred in the development of KM educational programs at two institutions. The research design affirmed the utility of case and grounded theory methods for producing valuable research findings.

My work explored two cases through the lens of a conceptual framework that I applied to various information processes to help me interpret “What is going on here?” This thesis is useful because it generated new questions, new ideas, new conceptual elements, and insights into processes that framed a phenomenon. This dissertation may stimulate additional breakthroughs in explaining individual, group, and, to some extent, organizational behaviours that comprise a KM program. Certainly the results will provide a foundation for building new programs and teaching knowledge researchers and workers about the field of KM.

1.9 Limitations

This investigation contained a number of inherent limitations—facets of the study outside my direct control that had an effect upon the study. An exploratory study exhibits the strengths and weaknesses associated with an inductive mode of analysis. While specific strengths and weaknesses are discussed in detail in Chapter 4, Sections 4.6 and 4.7, the major limitations encompassed:

- 1) the strict requirement of anonymity, confidentiality, and privacy by participating institutions;
- 2) the deficiencies associated with personal memories of the experiences;
- 3) the scarcity of documents and documentation, and some restrictions with the publication of their contents;
- 4) practical restrictions on the volume and availability of volunteer informants;

- 5) challenges of higher level abstraction in the categorization activities associated with grounded theory analysis; and
- 6) an inability to easily generalize results due to the inductive nature of the study.

However, none of the limitations critically inhibited the investigation.

1.10 Assumptions of the Study

This study also contained a number of assumptions:

- 1) at least one candidate site in North America or the UK would express interest in participating;
- 2) the sensemaking behaviours of selected informants could be elicited and described in a fashion that could yield valuable, accurate, and rich data;
- 3) interest by students in academic KM programs was increasing; and
- 4) KM program offerings were also increasing from institutions of higher learning.

1.11 Dissertation Outline

The dissertation is comprised of seven chapters graphically illustrated in Figure 1-1. Chapter 1, which you have almost completed, introduced the study by describing how I arrived at the proposed research problem and the research questions I posed. The literature review in Chapter 2 describes the emerging field of KM and, specifically, the foundational ideas surrounding KM education. Chapter 3 furnishes a description of the conceptual framework and contextual paradigm that guided the research study. Chapter 4 specifically describes the qualitative approach, research design, methodology, and procedures used to carry out the case and grounded theory analyses. Chapter 5 features the detailed descriptions of the two case studies in terms of the significant grounded theory categories discovered within the interviews and supported by the interviews and documents. Chapter 6 discusses the findings associated with the cases. Finally, Chapter 7 proposes a number of conclusions, implications, and recommendations for future research.

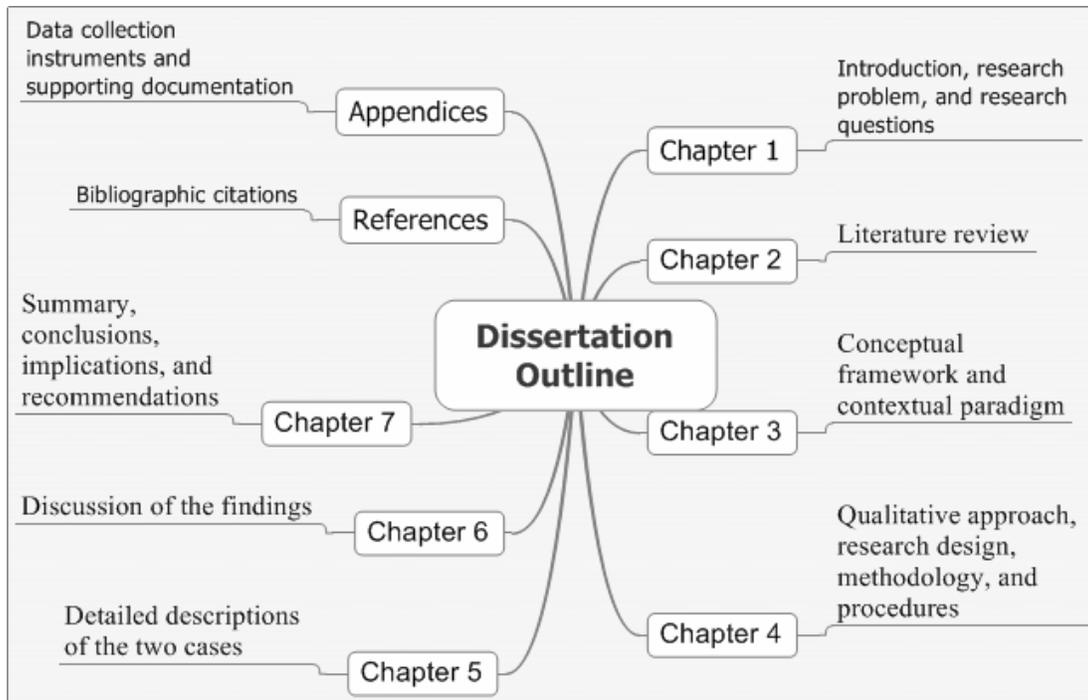


Figure 1-1 Dissertation Outline

2 Review of the Literature

Knowledge Management (KM) has been widely accepted as an emergent phenomenon, although minorities of academics, pundits, and practitioners have proposed that KM has already reached the status of a discipline. The following literature review demonstrated that research on the nature of the emerging field of KM is plentiful, but still in its infancy. Research on KM educational programs appears, at the most, to be conceptual, although concrete programs have been designed, developed, and deployed.

Since the proposed study is *exploratory* as well as *explanatory*, the literature search sought material that helped explore the *what* as well as the *how* behind the phenomenon of KM, including the context of an educational program. The literature review is presented in six different subsections that provide structure for this chapter:

1. Knowledge Management in the academy—the academic perspective;
2. Knowledge Management in educational programs—a research perspective;
3. Knowledge Management as a professional practice—a professional’s perspective;
4. Knowledge Management programs in Library and Information Science—the LIS perspective;
5. Knowledge Management research on educational programs—the Sutton perspective; and
6. Knowledge Management educational programs within the bigger picture—the broader educational perspective.

A considerable amount has been written to-date about KM. I have included a background examination of the literature in Appendix A for those who might benefit from an introduction to the KM field and discussion of some overlapping areas of inquiry. The appendix covers the topical areas:

- Knowledge Economy—the emergent economic perspective;
- Knowledge Management—a new, emerging field vs. a new discipline perspective;
- Knowledge Management at work—the practitioner and management perspectives;

- Knowledge Management and Organizational Learning—a complimentary perspective; and
- Knowledge Management and Complex Systems—a symbiotic perspective.

However, before I discuss the literature encompassing the concepts of KM I will need to provide some context by means of a definition. My initial review of the literature turned up at least fifty definitions of KM, and it is not yet an exhaustive list. Dalkir (2005, p. 4) reported that she had discovered over 100 disparate definitions. Most academics as well as practitioners agree that the term was poorly defined and ambiguously described (Binney, 2001; Den Hertog & Huizenga, 2000; Denning, 2004; Dixon, 2000; Schreiber, et al., 2000). This situation likely parallels the circumstance surrounding the emergence of other fields that have become prominent over the last two decades: Astrobiology, Information Science, Information Systems, MIS, Space Science, and Women and Gender Studies.

The explosion of homegrown definitions along with the development of well-founded and well-formulated definitions suggests that the field of KM is still emerging (Despres & Chauvel, 2002a). The multidisciplinary roots of KM (Dalkir, 2005, p. 6–7) constrain the capability of both practitioners and academics to agree on one definition for the emerging field. After significant review of definitions, I have adapted three definitions of KM that appear widely accepted and sufficient for describing this emerging field. The purpose was not to propose an ultimate definition for KM, but to provide some foundation for further discussion of the field and its accompanying concepts throughout the study.

An acceptable definition of knowledge management must encompass the concept of knowledge and the valuation associated with intellectual assets, as suggested by Dalkir (2005). I synthesized three widely accepted definitions I discovered during my research (Dalkir, 2005, p. 3; Becerra-Fernandez, Gonzalez, & Sabherwal, 2004, p. 30; Bennet & Bennet, 2004, p. 227) into one definition for this study:

- Knowledge Management is the deliberate and systematic framework encompassing communications, people, processes, structure, and technologies of an organization in order to produce sustainable competitive advantage or long-term high performance for the organization.
- The value and utility in the management of knowledge accrues to the organization through innovation, reuse, and organizational learning.
- The framework is operationalized through the convergence of personal, group, and enterprise action on a knowledge lifecycle.
- The knowledge lifecycle integrates the identification, creation, acquisition, capture, securing, production, publication, sharing, leveraging, and eventual disposal of knowledge resources and assets within an organizational memory.
- The organizational memory may be found within the tacit memories of the knowledge workers or within the explicit codification of knowledge stored in different information and knowledge systems.

2.1 Knowledge Management at the Academy—the Academic Perspective

2.1.1 Where Does KM Fit in the Academy?

The academic side of KM is multi-faceted because of the diversity of the departments within colleges, universities, and institutes where KM might be taught or research undertaken. These units could comprise virtually any department, school or faculty—there are no boundaries or restrictions for where KM can be taught or practiced.

Fascinating and insightful frameworks and disparate models of knowledge management prolifically abound. Dalkir (2005, p. 25–75) catalogued numerous authors of frameworks and models in her recent foundational text on KM based upon the perspectives of many of the KM luminaries:

- Beer (1981),
- Bennet and Bennet (2004),
- Boisot (1998),
- Bukowitz and Williams (1999),
- Choo (1998),
- McElroy (2003),
- Meyer and Zack (1996),
- Nonaka and Takeuchi (1995),

- Rolett (2003),
- Snowden (2000),
- von Krogh and Roos (1995), and
- Wiig (1993).

These were the visible tip of the iceberg. Virtually every significant practitioner and academic in the field has proposed a framework and model of some kind, for the simple reason that everyone is still trying to figure out this phenomenon. Consequently, academics responsible for teaching KM encounter a critical challenge:

- With so many different models and theories to choose from, which frameworks are best, which models work most successfully, and which theories furnish a foundation for further practice and research?
- If teaching KM is the same as teaching the management of knowledge or information, then schools of Business, Management or Library and Information Science would appear to be the natural location for KM programs; and, thus, KM programs would likely have stabilized by now.
- Why are KM programs offered in so many faculties and schools outside of Business, Management, or Library and Information Science?

As alluded to previously, practitioners have assumed that the management of knowledge is critical to business success and competitive advantage (Stewart, et al., 2000). However, many researchers are not so arrogant to think that we can actually manage knowledge in a manner similar to any other external object or resource. If we begin from the fields of epistemology, philosophy, metaphysics, and theology, we can infer that the ‘knowledge’ being discussed is actually the ‘stuff’ in the minds of individuals, not necessarily something that can easily be fashioned into an object outside the mind. This irony is a core issue within the KM field, and is often referred to as the tension between *tacit knowledge* (knowledge in the mind) and *explicit knowledge* (knowledge objects) (Nonaka & Takeuchi, 1995, p. 8). Therefore, whenever phrases like ‘management of knowledge’ or ‘managing knowledge’ appear throughout bibliographic sources, the management of *explicit* knowledge, not *tacit* knowledge, is often inferred.

2.1.2 What is the Relationship of KM to IM?

In *The Knowledge Management Handbook* (1999), a well-respected KM academic, Jay Liebowitz, posed the question quite pragmatically as the title of his preface: "Knowledge Management: Fact or Fiction?" (p. iii). He attempted to focus his readers on the intrinsic problems of talking about 'knowledge.' No wonder so many definitions and rogue sources for information about KM exist. A central authority of accepted KM experts and pundits has yet to be recognized.

One of the more visible academic protagonists critical of the KM field is Dr. Tom Wilson at the University of Sheffield in the UK. Regardless of his personal opinions, though, he presented a balanced dialogue in his online journal, *InformationR.net*. In 2002 he dedicated Volume 8, Issue 1 to the theme of KM. His lead article, *The Nonsense of 'Knowledge Management'* guided the reader through numerous musings on Wilson's misgivings with the concept of KM. He concluded that KM was "an umbrella term for a variety of organizational activities, none of which are concerned with the management of knowledge" (2002a, Abstract, ¶ 1).

In that same issue of *InformationR.net*, Bouthillier and Shearer (2002) summarized evidence associated with a case study analysis in their article *Understanding Knowledge Management and Information Management: the Need for an Empirical Perspective*. Trends in the practice of KM were identified within a variety of private and public sector organizations. The goal of the study was to analyze six dimensions associated with KM (The Study, ¶ 1):

1. Stated goals and objectives;
2. Type of knowledge being managed;
3. Sources and consumers of knowledge;
4. Knowledge processes involved;
5. Methodologies employed; and the
6. Technology used.

The result was a typology of eight distinct methodologies grouped according to their primary area of focus: action, communication, selected dissemination, and storage and retrieval. The study proposed a number of important conclusions surrounding the

distinction between *Knowledge* Management and *Information* Management (IM), most importantly: knowledge usually referred to tacit knowledge; KM most often equated to the sharing of tacit knowledge; information professionals had a lot to contribute to the practices associated with KM; and finally, “the ontological and epistemological aspects of knowledge are still so ill-defined and poorly understood that KM cannot be an emergent discipline” (Conclusion, ¶ 6).

Dunn and Hackney (2000), in a similar vein to Bouthillier and Shearer, proposed to try and differentiate KM from IM with their KM Model for an IM Curriculum. Dunn and Hackney suggested, quite simply, that information was manageable, but knowledge was not. However, this did not lead them to dismiss KM. In fact, they were adamant about the need to teach KM, extend organizational learning with KM, and build a strong base for competition based upon KM systems. They strongly felt they could “predict with greater certainty that an inadequate teaching of KM will almost certainly leave individuals with a competitive disadvantage” (p. 274).

2.1.3 Emergent KM Frameworks

Many researchers have tried to grapple with the myriad of KM frameworks and models, only to suggest additional paradigms (Hazlett, McAdam, & Gallagher, 2005) and frameworks of an increasingly abstract nature (Davé, 1998; Rubenstein-Montano, et al., 2001, Schreiber, et al., 2000). There are five academics of note who have reported substantial KM research, including frameworks and models: Chauvel, Despres, Holsapple, Joshi, and von Krogh.

Danièle Chauvel is the Director of the European Centre for Knowledge Management at the Graduate School of Business, Marseille-Provence (France). Charles Despres is a Professor of Organization and Director of International Affairs at the Graduate School of Business, Marseille-Provence (France). Clyde Holsapple is a Professor of Decision Support Sciences in the C.M. Gatton College of Business and Economics at the University of Kentucky in Lexington (USA). Calvin Joshi is a professor in the School of Accounting, Information Systems, and Business Law at Washington State University, Pullman (USA). Georg von Krogh is Professor of Strategic Management and Innovation

at the Swiss Federal Institute of Technology (ETH), Department of Management, Technology, and Economics in Zurich. Each academic reflects a divergent theme associated with the emerging interdisciplinary field.

The work of Chauvel and Despres specialized in describing the broad range of KM subjects:

- mapping of KM domains (Despres, 1996; Despres & Chauvel, 1999a, 1999b, 2001, March 30–31);
- spectrum of KM arenas (Despres & Chauvel, 2000a, 2000b); and
- KM business practices sponsored by the European Centre for Knowledge Management (Despres & Chauvel, 2002a, 2002b).

Of particular importance was the taxonomy that Despres and Chauvel created to map the different fields that could comprise what many have accepted as the field of KM. I extended this taxonomy for this study as a means of putting a border around the search for KM programs. I was an early advocate of developing a KM taxonomy (Sutton, 2001a, 2001b), like Despres and Chauvel, in order that professionals and academics could find an ontological base for agreement in the terms and concepts that evolved from the field of KM.

Holsapple and Joshi originally worked together at the University of Kentucky and have reported on some very narrow, but interesting, research venues entailing frameworks, ontologies, and taxonomies (Holsapple & Joshi, 1999a, 1999b, 2000, 2001, 2002a, 2002b). Holsapple is also well known for his broader perspectives of KM and previous specialization in decision-support systems (Holsapple, 2003; Holsapple & Whinston, 1996).

Finally, a survey of von Krogh's early work focused on developing a knowledge-based theory of the firm (Scharmer, 1999; von Krogh & Grand, 2002; von Krogh, Ichijo, & Nonaka, 2000, 2001; von Krogh & Roos, 1996a). His visibility is bolstered and sustained by his theoretical work in organizational/corporate epistemology (von Krogh & Roos, 1995, 1996b, 1996c, 1996d; von Krogh, Roos, & Harem, 1996; von Krogh, Roos, & Kleine, 1998; von Krogh, Roos, & Slocum, 1996; von Krogh, Roos, & Yip, 1996). Most

recently he has proposed extensions in the development of Organizational Knowledge Creation Theory—“the process of making available and amplifying knowledge created by individuals as well as crystallizing and connecting it with an organization’s knowledge system” (Nonaka, von Krogh, & Voelple, 2006, p. 1179).

2.1.4 The Next Generation of KM

In the past few years two founding members of the Knowledge Management Consortium International (KMCI), Firestone and McElroy, proposed a new wrinkle to the KM vocabulary by introducing *The New Knowledge Management* (TNKM). This perspective on KM was based upon the changes that have taken place in KM over the past two decades. The two-age view proposed by Snowden (2002) and the three-stage model presented by Koenig (2002) are contrasted with the two-generation view of KM proposed by Firestone and McElroy (2003):

Koenig and Snowden take a storytelling approach to analyzing changes in the KM evolutionary process, whereas McElroy bases his case for fundamental change on the KLC [Knowledge Life Cycle] knowledge processing framework and the distinction between knowledge processing and KM.

Koenig takes an IT approach to KM and basically tells a story of changes in IT-related concerns. Thus, he starts by noting that the first stage of KM was about using the Internet for knowledge sharing and transfer. The second stage was a reaction to the failure of the first to live up to its promise by failing to take account of human factors essential to make IT applications successful, and the third stage is about improving the IT side by making it easier for humans to navigate the information or knowledge they want or need....

The situation is little better with Snowden’s approach. Boiled down to his essentials, he almost seems to be saying:

1. the first stage was about applying the BPR [Business Process Reengineering] notions of Hammer and Champy (1993) on a foundation of Taylor (1912);
2. the second stage was about applying the vision expressed in Nonaka and Takeuchi (1995); [and]
3. the coming age will be about applying the vision expressed in his own Cynefin model, coupled with Stacey’s notions about the paradoxical character of knowledge, and expanded through its synthesis with the Cynefin systems topology. (p. 134–135)

McElroy’s (1999) approach was founded on his *Knowledge Life Cycle* where he proposed that only two generations have been spawned so far, the:

1. *First Generation Knowledge Management (FGKM)*, referenced as “supply side KM” and primarily describing the supplying of previously created knowledge within a framework of knowledge distribution, sharing, and other integrative processes;
2. *Second Generation Knowledge Management (SGKM)*, alternatively referred to as TNKM, and referenced as both “supply side KM” and “demand side KM” associated with knowledge processing responding to the demands of business problems.

He added to this supposition a clear distinction in his work between the knowledge production process (supply side KM) and knowledge integration process (demand side KM) that comprise the overall knowledge processing behaviour. Knowledge processing is a socially constructed cycle associated with making and sharing knowledge, not just distributing knowledge that already exists.

Whereas KM within the KLC is a management activity and meta-process that enhances the knowledge processing cycle:

Not all organizations support formal knowledge management functions; but all organizations do engage in knowledge processing. The purpose of KM according to this view is to enhance an organization’s ability to perform knowledge processing, and ultimately by improving it to enhance the quality of business process behavior and its ability to adapt to its environment. (Firestone & McElroy, 2003, p. 98)

Firestone and McElroy (2003) believe that KM is evolving, and that the next generation will be based upon the specification of a new fundamental process discovery in terms of knowledge processing that will complement the current knowledge production and knowledge integration processes.

2.2 Knowledge Management in Educational Programs—a Research Perspective

A review of dissertation databases, educational research databases, and online journals in 2002 initially suggested a sparse and diverse volume of evidence barely supporting academic research and information pertaining to KM educational programs. However, in the last four years articles, book chapters, and complete monographs reporting research

on KM in education and KM educational programs have grown substantially. Recently Beheshti (2006) provided an indicative count of the volume of theses and dissertations published since 1998 from *Dissertation Abstracts Online* where “knowledge management” appeared in the title. The total was 172, and provided a substantial foundation of material to potentially chart the progress of KM in the last nine years. These two streams—KM in educational institutions and KM educational programs—characterize KM and education.

2.2.1 KM in Educational Institutions

The first stream, KM in educational institutions, is associated with academics and researchers who see schools, colleges, and universities as centres for KM work (Becerra-Fernandez & Stevenson, 2001; Hargreaves, 1999; Metaxiotis & Psarras, 2003; Pircher, 2002, April 5–6; Reis & Eugene, 2006; Rooney, 2000; Rowley, 2000; Royal School of Library and Information Science, 2005; Steyn 2004). In fact a carry over from the practitioner environment is the discussion surrounding the creation of competitive advantage in higher education. Serbam and Luan (2002) described a number of topical areas where they specifically related KM to higher education and research:

- data mining,
- portals and personalized profiles for students (customers),
- Customer Relationship Management (CRM) for better response to customer requirements and institutional research,
- Organizational Learning (OL) and a research culture facilitated by KM,
- knowledge-based systems for institutional research, and
- KM systems and technologies to support a university infrastructure.

Kidwell, Vander Linde, and Johnson (2000) described how corporate KM practices could be applied in higher education research to provide: a repository for research results, curricula, and learning objects; a portal for research administration, teaching, learning, and best practices in the classroom; a hub for new faculty, alumni, financial and student services, corporate relationships, discipline-specific information, and learner assessments. Cronin and Davenport (2001) proposed the leveraging of the inherent knowledge assets of the university in terms of both social and human capital, and the potential for licensing

it to industry and business. Lyman (2001) was interested in promoting the use of KM in scholarly communication and distribution. Finally, Gilliland-Swetland (2001) integrated KM into the need for better and more accessible documents and records that the university holds as part of doing business.

A number of researchers see KM as extending their capability to teach (Carroll, et al., 2003; Carroll, Rosson, Dunlop, & Isenhour, 2005; Galbreath, 2000; Hannum 2001; Lee & Nelson, 2004; Petrides & Guiney, 2002; Rao, 2002). Oakley (2003) saw KM as an enabler for Education Departments to disseminate “evidence based” education and research results to the larger education community. Some universities offer to teach KM with other organizational and technological topics: E-Commerce and KM (Parycek & Pircher, 2003); and OL and KM (Teare, 1998). Petrides and Nodine (2003) actually established an *Institute for the Study of Knowledge Management in Education* and issued a manifesto describing their framework for understanding the practice of KM, its assessment, and its relationship to information management.

Finally, the OECD spawned critical research on the implications of the knowledge economy on education and learning, which supports the rationale that KM is becoming an integral element of education and educational programs (Centre for Education Research and Innovation/OECD, 2000; OECD, 2003a, 2004b). In *Knowledge Management in the Learning Society* the OECD’s (2000, p. 69) evolving agenda encompassed a wide-ranging set of questions that relate KM and the knowledge economy:

- What knowledge (and innovation) is likely to be needed and by whom in education systems of the future?
- What are the best ways of i) producing, ii) mediating/disseminating, and iii) applying such knowledge?
- What action needs to be taken to increase the education system’s capacity for the successful production, mediation and application of knowledge, and what infrastructure might be needed to support and sustain this capacity?
- How can this be done to ensure that education systems are efficient and effective and meet the new goals and functions that are likely to be set for them?
- In particular, how might all these developments influence and support “schooling for tomorrow”?

The OECD followed this by proposing a framework of responses that directly connected the emerging field of KM to these educational imperatives through eight themes (p. 70):

- Developing a commitment to knowledge management;
- Expanding the role of practitioners in knowledge management;
- Establishing and using networks for knowledge management;
- Using ICT to support knowledge management;
- Forging new roles and relationships between researchers and practitioners to support better educational R&D [Research and Development];
- Devising new forms of professional development for practitioners that reflect and support knowledge management priorities;
- Integrating knowledge capital and social capital; and
- Designing an infrastructure to support knowledge management.

OECD countries are making a commitment to the integration of KM and education, especially in the teaching of KM at the higher education levels of Master's and PhD.

2.2.2 Early KM Education

One of the earliest missives on a KM educational program within a university was found in Roberds and Fox (1997). The paper described an undergraduate curriculum that integrated both IM and KM at James Madison University in Harrisonburg, VA (USA), within an Integrated Science and Technology (ISAT) college level program. Seven characteristics differentiated the ISAT program from other science and technology programs of that time period (p. 158–159):

- integrated instruction—integrating mathematics, science, and technology;
- team teaching—broad representation of faculty from multiple disciplines, each with its own preferred teaching approach;
- consideration of nontechnological issues—presentation of a social science dimension to science and technology;
- student collaborative learning—actively promoting the study and solving of problems collaboratively;
- intrinsic use of the computer—the computer was situated as an integral problem-solving tool;
- use of modern pedagogical methods—promotion of student-centered teaching and inquiry-based learning methods; and,
- development of motivational content—motivating students to learn was a priority and came through application-based instruction with an inquiry-based approach.

Within the ISAT program, 'information and knowledge management' (IKM) was both a strategic sector and an option for concentration. This guiding role was based upon two assumptions that are at the core of the program: information and knowledge are key economic factors in the emerging knowledge economy, and, IKM skills and tools are

pervasive within all of science and technology. Thus, the mission of this KM program was to ground students in both the practice and theory of IKM so they could apply the competencies they learned to the workplace immediately upon graduation or carry on further in graduate school with a solid foundation for specialization in science and technology.

The second earliest paper describing a KM program was in den Biggelaar (1997). A Master of Science Program for educating knowledge engineering professionals in Information and Knowledge Technology has been in operation since 1988 at the Centre for Innovation of Business Processes with Information Technology (Kenniscentrum CIBIT), Utrecht, Netherlands. The objective of this program was to teach students:

- appropriate skills to perform in practice as professional Knowledge Engineers,
- insight in current developments in Knowledge Engineering, and
- familiarity with important sources of information in Knowledge Engineering (journals, conferences, and organizations).

The role or title of Knowledge Engineer is more often used within the Artificial Intelligence/Expert Systems field, but it certainly is a role that an individual may take on within the emerging KM field. The experience of faculty at the Centre (Ibid.) has found that cohorts who have taken the program progress to careers in engineering management and are very highly motivated. The program has also resulted in a natural set of business contacts for the students that extend into a very active Community-of-Practice, where further consultation and exchange takes place after the students graduate.

Teaching and dissemination concepts for KM techniques were described in Macintosh, Filby, and Kingston (1999). Their approach was based upon a number of training modules that focused on practical KM, processes and modeling techniques within a context of Knowledge Engineering, and the support of knowledge assets management.

Another example of a course syllabus for a KM program was found in Appendix A of Srikantaiah and Koenig (2000). The description provided a structured outline of a course to familiarize students with the current theories, tools, techniques, methods, and models

in the KM field. The course was co-located in the School of Library and Information Science and the Graduate School of Business at Dominican University in River Forest, IL (USA).

2.2.3 The K-Organization

Keong, Willet, and Yap (2001) described their KM curriculum in a business school that had actually been reengineered as a *K-Organization* (Knowledge Organization). Taylor's Business School at Taylor's College made changes to reflect and promote the Malaysian government's policy initiative to embrace a knowledge economy where soft technology and knowledge replace capital and energy. Specialists from numerous departments—English, information technology (IT), management, marketing, sociology, statistics—represent the teaching teams.

As part of the Danish Ministry of Science, Technology and Innovation's commitment to the Organization for Economic Cooperation and Development (OECD) KM Project, the ministry embarked upon an ambitious program to create an Executive Master in Knowledge Management (EMKM) at the Copenhagen Business School and Learning Lab Denmark (Bertramsen, 2002). A new Danish University Act and education reform of Bachelor's and Master's programs has tried to situate Danish universities as drivers of knowledge communities. The EMKM focused on knowledge, innovation, and strategy within a goal-oriented management perspective. The program goal was teaching the participants to manage knowledge processes and make decisions under high levels of uncertainty, drawing upon both practical and theoretical material.

Wilson (2002b) proposed that discontinuous and catastrophic change was presenting unique challenges for LIS education and that faculty and departments needed to develop a strategy for realignment of LIS with other cognate fields. Although he never specifically mentioned KM, he described convergence and divergence in global LIS programs encompassing communications, information technology, information systems, medical informatics, and WWW (World Wide Web) systems. Alternatively, Steve Fuller (2002a) in Appendix C of *Social Epistemology* described a core curriculum for a graduate program entitled Knowledge Policy Studies (a topic that is briefly, if at all, dealt with in

all other KM programs). The Knowledge Policy Studies program would extend the rigorous study of philosophy and political science.

Brogan, Hingston, and Wilson (2001) described an interdisciplinary teaching curriculum for KM that encompassed Information Use, Information Architecture, and Knowledge Management, and combined IT and LIS courses in a graduate offering. Interestingly, the exact same interdisciplinary program design is offered within Kent State University's Information Architecture and Knowledge Management Program combining resources from six schools and departments (Froehlich, 2005, June 3; Sutton, 2005). Naeve (2004) proposed a *Knowledge Manifold* (based upon KM principles) as an open educational architecture for teaching. Koenig (2004) and Srikantaiah (2004) both proposed overarching models for KM education. Lee and Nelson (2004) described a conceptual framework for representing knowledge in a teaching environment. Many other opportunities have arisen where KM was applied to the educational field.

2.2.4 KM Programs Throughout the Academy

Michael Stankosky's (2005a) work at George Washington University comes at KM from a very unique interdisciplinary perspective: Engineering Management and Systems Engineering. He sees the application of KM as an enterprise engineering challenge focusing upon four pillars: leadership, learning, technology, and the organization. From the multidisciplinary perspective Calabrese (2000) envisions four sub-disciplines under each pillar as the DNA of Knowledge Management: technology, organization, leadership, and learning (see Table 2-1 adopted from Calabrese, 2005, p. 25).

Chaudhry and Higgins (2001, p. 7; 2004, p. 132–133) proposed specific curriculum areas and topics for KM courses (see Table 2-2). When Stankosky and Chaudry and Higgins proposed their initial programs, the theoretical, practitioner, and andragogical foundations for KM programs were in their infancy (Chen, Chiu, & Fan, 2002; Chen & Chiu, 2005; Loon & Al-Hawamdeh, 2002; New Zealand Ministry of Education, 2001; Sutton, 2002a). It appears that KM has not yet reached *childhood's end*.

Pillar	Disciplines	Sub elements
Technology	Computational Linguistics, Computer Science, Operations Research, Electrical Engineering, Mathematics/ Statistics, Logic	business modeling systems; corporate intranet; data warehousing; database management software; decision support systems; groupware; intelligent agents; multimedia repositories; neural networks; speech understanding
Organization	Operations Research, Organization Development, Philosophy, Psychology, Sociolinguistics	business process reengineering (BPR); hierarchic, centralized, or decentralized; closed/power based; internal partnering versus competing type culture; management by objectives (MBO); matrix-type organization; metric standards; open/sharing; operating procedures for knowledge sharing; process workflows; total quality management (TQM)
Leadership	Behavioral Profiling, Linguistics, Logic, Management Information Systems, Management Science, Operations Research, Philosophy, Psychology	executive commitment; formal KM roles in existence; KM programs tied to metrics; knowledge sharing specific and general goals and objectives; strategic planning; tangible rewards for use of KM; vision sharing
Learning	Cognitive Psychology, Management Philosophy, Mental Models, Organization Development, Personal Mastery, Shared Vision, Systems Engineering, Team Learning	capturing, organizing and disseminating knowledge; communities of practice; exchange forums; innovation encouraged/recognized/rewarded; management support for continuous learning; tacit and explicit knowledge; virtual teams;

Table 2-1 Calabrese’s Disciplines and Elements Associated with Pillars of KM

As an anecdotal coda to this section, I had the privilege of being invited to moderate a panel on *KM Education Issues* (Sutton, 2002b) at the 2002 ASIST Conference in Philadelphia, PA (USA). The panelists from both George Washington University and Drexel University confirmed in their presentations the lack of uniformity and cohesion amongst the different KM programs.

#	Curriculum Area	Topics
1	Foundations	Definitions and complexity of knowledge
		Forms of knowledge (tacit, explicit)
		Sources of Knowledge (best practices, communities of practice)
		Knowledge workers
		Intellectual capital
		Knowledge-based organizations
		Knowledge management process
		Knowledge management enablers
		Knowledge sharing models
2	Technology	General overview of commonly used technologies
		Selection and design considerations for KM enabling technologies
		KM Architecture
		KM Tools and applications
		Collaboration (groupware tools)
		Business Intelligence (data analysis tools)
		Document Management Systems
		Intranets/Portals/Web sites
3	Process (Codification)	Knowledge audit
		Capturing and acquisition of knowledge
		Knowledge mapping
		Organization and categorization of knowledge resources
		Developing and maintaining knowledge repositories
		Search and retrieval, use, and re-use of knowledge
4	Applications	Case studies and success stories of KM application in consulting firms and IT companies
		Considerations for KM applications in different sectors and industries
		Implementing a KM project in an organization
5	Strategies	Integrating knowledge into organizational work to gain leverage from organizational knowledge resources
		Steps for sustaining the KM work
		Institutionalization of KM activities
		Human resources and support (role and responsibilities of knowledge professionals)
		Measurement of knowledge assets

Table 2-2 Proposed KM Curriculum of Chaudhry and Higgins

2.3 Knowledge Management as a Professional Practice—a Professional’s Perspective

2.3.1 Education of KM Professionals and Practitioners

The education of KM professionals leads us to the emergence of schools of thought that believe that KM education should be established within the context of a learned society of professionals. Some pundits have proposed the need to establish a new professionalism based upon KM certification. What would make a knowledge manager a professional? Can certified professionals represent the ‘brain trust’ of the emerging field of KM? How can we develop certification programs for a field that is not a discipline?

Like schools for other professionals—medicine, health, management, engineering, or LIS—the programs for educating KM professionals are quickly establishing themselves and increasing their academic visibility. However, it is unclear which field or discipline might be in the best position to carry the KM banner, or whether any one discipline should have the authority to direct its development and placement. As Southon and Todd suggested (2001):

Prospects of ‘turf warfare’ would be very destructive to all involved and to the overall understanding of the subject. Such conflict could be resolved, however, if participants saw themselves as contributing to knowledge management rather than owning it as such. (Discussion, ¶ 10)

In Shariq (1997) we find what appears to be the first manifesto appealing for a KM profession. Shariq’s vision called for the establishment of a professional society with an education program in KM focused primarily upon policy makers, business leaders, and executives, as well as knowledge professionals. As described in Chapter 1, a number of organizations have sprung up to offer KM certification:

- Global Knowledge Economics Council (GKEC),
- Knowledge and Innovation Management Professional Society (KIMPS);
- Knowledge Management Consortium International (KMCI); and
- International Knowledge Management Institute (IKMI).

Shariq also proposed a post graduate initiative that included implementation of a network-based tool for digital distance education coupled with a global community of

practice for knowledge management education. Shariq was a bit of a prophet in the vision he originally had in the mid-1990s. Today, ten years later, professional education and accreditation appear to be stabilizing.

2.3.2 KM Education in the Government Sector

Bennet and Bennet (2004, p. 230–240) also previously proposed an accredited certification program in the US Federal Government for government employees attending certification courses. This program included the following learning objectives:

1. Have knowledge of the value added by Knowledge Management to the business proposition, including the return on investment, performance measures, and the ability to develop a business case.
2. Have knowledge of the strategies and processes to transfer explicit and tacit knowledge across time, space and organizational boundaries, including retrieval of critical archived information. This transfer has a spiraling nature, i.e., ideas build on ideas, and old ideas may or may not be of current value.
3. Have knowledge of state-of-the-art and evolving technology solutions that promote KM, including portals and collaborative and distributed learning technologies.
4. Have knowledge of and the ability to facilitate knowledge creation, sharing and reuse. This includes developing partnerships and alliances, designing creative knowledge spaces, and using incentive structures.
5. Have knowledge of learning styles and behaviors, strive for continuous improvement and be actively engaged in exploring new ideas and concepts.
6. Have the ability to use systems thinking in implementing solutions.
7. Have the ability to design, develop and sustain communities of interest and practice.
8. Have the ability to create, develop and sustain the flow of knowledge. This includes understanding the breakthrough skills needed to leverage virtual teamwork and the effective use of social networks.
9. Have the ability to perform cultural and ethnographic analyses, develop knowledge taxonomies, facilitate knowledge audits, and perform knowledge mapping and needs assessments.
10. Have the ability to capture, evaluate and use best-known practices, including the use of storytelling to transfer these best practices.
11. Have working knowledge of state-of-the-art research and implementation strategies for knowledge management, information management, document and records management and data management. This includes project management of knowledge initiatives and retrieval of critical archived information.
12. Have understanding of the global and economic importance of developing knowledge-based organizations to meet the challenges of the knowledge era.
13. Have the ability to manage change and complex knowledge initiatives and projects.

14. Have the ability to identify customers and stakeholders and tie organizational goals to the needs and requirements of those customers and stakeholders.

Their ground-breaking work resulted in a widely accepted approach to assess any KM educational program offering within the US Federal Government.

The increase in credentialing and certification begs the question: *Is KM a discipline composed of professionals, or is KM a loosely knit network of practitioners and academics?* Reviewing the marketing hype that is on the websites of the certification bodies would lead me to believe that KM had already achieved the status of a discipline. However, a number of issues still abound with respect to describing KM as an emerging field of practice vs. a discipline.

2.4 Knowledge Management Programs In Library and Information Science—the LIS Perspective

2.4.1 Early LIS Interest in KM

A cursory review of LIS syllabi carried out by Reardon (1998, Knowledge Oriented Information Courses, ¶ 3) concluded that the “information scientist of today has a substantial foundation upon which the knowledge manager of the (near) future can be built.” Reardon proposed a skeletal KM program, and most importantly conjectured that:

Knowledge management offers, even demands the inclusion of sound theoretical elements that focus, for example, on the nature of knowledge and on the behavioral aspects of knowledge development, acquisition, communication and use. It may even be appropriate to include study of the generation of knowledge as a prime product of innovation and as a by-product of adaptive learning. These elements of a knowledge management course are likely to be less subject to change than are the underpinning technologies that will make possible the organization, storage, updating, deployment and retrieval of knowledge. They are a recognition that knowledge management focuses on people as generators of knowledge at least as much as users of information. (Knowledge Oriented Information Courses, ¶ 3)

Davenport and Cronin (2000) suggested that KM had been visible for about ten years, but that the concept was still unstable. They discussed three conceptual domains that they believed comprised the (then) current state of KM (¶ 1):

- KM1: knowledge management is predominantly seen as ‘information management’ (management of internal and external publications);

- KM2: knowledge management is seen as management of ‘know-how;’
- KM3: ‘knowledge management’ denotes a major conceptual shift, from knowledge as a resource to knowledge as a capability, a readiness to respond.

Their conclusion was that KM has a specific place in the LIS curriculum and that KM has evolved from the management of information to information about the guiding beliefs of individuals, groups, or organizations. Chaudhry and Higgins (2001) published the earliest study of KM courses.

The UK Library Association (1999, Summary, ¶ 1) proposed that:

We are at a critical juncture in this phase of knowledge management programmes: in their current state much development remains to be completed and turned into accepted practice. Even at this early stage, however, there are clear indications that the focus on communities and cultural change, as well as the recognition that knowledge management tools are not an end in themselves, will guarantee that the ensuing body of practice will become a permanent feature in competitive businesses.

Subsequently another professional association, The International Federation of Library Associations and Institutions (2000), was an early adopter of the goal of teaching KM within LIS programs.

Australia demonstrated critical leadership in the development of KM educational programs. The Royal Melbourne Institute of Technology re-engineered its LIS department because of falling demands for its courses. The result was increased revenue for the school and a better job market for its graduates (Martin, 1999). Edith Cowan University in Australia carried out a survey that drew upon a small audience of academics and practitioners in the sectors comprising libraries, information management, records management, and computer systems. The objective was to solicit opinions from numerous interested publics on the appropriate development of a KM program within the School of Computing and Information Science. Results from this survey directly influenced their model for developing a KM program structured along three primary directions: knowledge computing, knowledge management foundations, and knowledge management practice (Brogan, Hingston, & Wilson, 2001).

In *The Time Is Now* Eiriksson and Retsloff (2001) seemed to chance upon the theme of KM in LIS education from a back door:

Exploring the nature of information and knowledge is a journey into a complex, dynamic and relative sphere. If one asks oneself the question; what information and what knowledge is needed/or would be useful for examining the concept of information and knowledge, the result can be described as a circular paradox, thus leaving LIS as a self-referring phenomenon with the exact same characteristics as its objects of examination.

We believe that a fruitful way to look at studies in LIS schools is the study of ideas. Both when examining the concept of information, knowledge and libraries, and when examining the qualifications and competencies required for doing this. We suggest a LIS related concept of ideas. Studying disciplines as ideas then means mapping out epistemological potential of areas relevant to LIS. ... Our use is somewhat different in the sense that we relate epistemology to situated understandings. (p. 6)

2.4.2 The Candidate Goal of KM in the LIS Curriculum

Numerous surveys of KM programs affirmed an emerging framework of primary goals for KM programs (Chaudhry & Higgins, 2001, 2004; Johnson, 2000; Hildreth & Koenig, 2002; Markey, 2004; Saito, Medeni, Machado, & Umemoto, 2004; Sarrafzadeh, Afsaneh, Martin, 2006, Summer; Sutton, 2002a):

- to teach students how to apply their acquired Management and LIS Education and skills to their professional or occupational endeavours;
- to integrate KM frameworks and tools into approaches to leadership, management, and cultural transformation;
- to deploy KM solutions through an appropriate mix of information technology and human-based systems;
- to build learning organizations that embrace organizational learning and innovative approaches to diffusing knowledge;
- to introduce students to the fundamentals of a professional Body of Knowledge they could eventually use if they take up roles in the KM profession; and
- to ground the next generation of KM teachers in the theory and pedagogy of the emerging KM discipline and profession.

Ruth, Shaw and Frizzell (2003, p. 583) extend this thematically to include the following foci:

- Leadership, management and culture;
- Organizational learning;
- Information technology;
- Library/information sciences; and
- Innovative and novel approaches to diffusing knowledge.

Additionally, there appears to be a significant cognitive challenge for faculty who teach KM because of its multidisciplinary sources. Many KM educational programs being offered suggest a potential interdisciplinary nature to the program as well as the clustering of multiple disciplines that should be associated with a KM program offering (Al-Hawamdeh, 2003, p. 168, 2005, p. 1201).

2.4.3 Knowledge and Knowing in LIS

In *Knowledge and Knowing in Library and Information Science: A Philosophical Framework*, Jon Budd (2001) posed the following questions and recommends the following framework with respect to knowledge and knowing in LIS:

In LIS there has been frequent mention of refocusing on knowledge management, and even renaming professionals knowledge specialists. However, there has been little precious discussion about what knowledge management is, or even what constitutes knowledge. Can we afford, conceptually or practically, to ignore these issues? If we do ignore them, what is the cost?

I maintain that attempting to conduct inquiry in LIS is meaningless if we haven't asked those epistemological questions:

1. Is knowledge possible?
2. What constitutes knowledge?
3. How do we know that we know?

...All disciplines, all "sciences" seeks answers to two basic questions: "First, the question, AN EST—whether the thing exists; and then the question QUID EST—what is its nature. (p. 203–204)

Budd furnished me with an excellent stepping off point for discussing KM programs within schools of LIS. Traditionally, LIS professionals have had to contend with the problem and challenge of organizing and managing knowledge. Yet, LIS professionals may have been too slow to integrate the profession into the emerging field, thus, losing a critical leadership opportunity and race to see which profession directs the new profession. Can LIS professionals regain that opportunity?

Within university LIS departments an embryonic group of core competencies are being identified in order to respond to this emerging demand for expanded training and education in KM (Corcoran, Dagar, & Stratigos, 2000; Hobohm, 2004; Rehman & Chaudhry, 2004; S. Sutton, 1998; Varalakshmi, 2003; Wormwell, 2004). The approaches and groupings may appear fragmented and ambiguous but this is the nature of an emerging field and should not discourage experimentation. Librarians' experience with information sciences should furnish them with special insight into the management of information (and knowledge) as a commodity. Librarians have been recognized universally as the intermediaries between the universe of information and the customer. They have been trained to capture and organize knowledge efficiently, and should be ideally suited to teach and develop KM programs. However, Abell (2000) warned that there was a lack of credibility in the impact that library and information professionals were having on KM:

The library profession appears to have little impact on KM organizations. While it is true that a few mature KM environments are actively integrating library skills into their KM teams, many are late in discovering that these skills even exist. Some organizations see a limited involvement for library professionals despite the development of imaginative and relevant courses in academic departments (e.g., business intelligence, strategic information resources). This view continues because of the perception that librarianship is a profession that seldom engages with “the business.” Still more disturbing is that the wealth of information theory in literature of library and information science directly relevant to KM is seldom, if ever, acknowledged in the KM literature. ...

While knowledge coordinators, navigators, and stewards are being recruited or developed in many functions and industries, the library and information profession is not the natural place to look for them. They still come from “the business” or are recruited for “a business function,” and many of them need to acquire information skills along the way. (p. 37, 41)

But, as in earlier periods, librarians, information specialists, records and document managers, and archivists are only marginally acknowledged as key leaders in the significant transformation associated with the emerging KM phenomenon. Often a fixation upon professionalism is exhibited at the expense of the competencies that are lacking in the emerging field of KM (Abell & Oxbow, 2001, p. 148–163):

- perceived disconnect with the core business functions;
- predominance of a service mentality;

- insufficient innovative and entrepreneurial drive;
- deficient business acumen;
- shortage of experience negotiating contracts, service level agreements, alliances, and partnerships;
- inability to see the larger business picture in terms of problems, challenges and solutions;
- incapable of communicating the value of their skills to senior management;
- difficulty is spanning organizational boundaries and constraints where strategic partnerships need to be built across the enterprise;
- paucity of project management experience initiating and integrating cross-functional and matrix-driven projects; and
- scarcity of effective leadership and marketing skills.

2.4.4 Wake Up Call to LIS Academics and Professionals

In *The Phenomenon of Knowledge Management: What Does It Mean to the Information Profession?* Broadbent (1998) provides a sobering wake-up call to the LIS profession by conveying her strong support for action:

Librarians are generally driven by a desire to provide access to information sources and match this desire with values that assume information sharing is a good thing. In a recent wide-ranging and stimulating address, Warren Horton, Director-General of the National Library of Australia, and IFLA [International Federation of Library Associations and Institutions] executive member, drew attention to these two facts about the library profession. Librarians are involved in a continuing search for excellence in organizing and codifying information sources. This is embodied in efforts to make access to electronic publications "intelligible and accessible." The second fact is that the library and information profession rests on bedrock of very solid and long term values. Both of these attributes are important for the practice of knowledge management. But they are not sufficient. They need to be harnessed in two directions: towards specific organizational objectives that provide greater value to customers and clients; and, second, in the way in which library and information services are themselves managed. (Concluding Remarks, ¶ 5)

IFLA is a useful source for information about KM and the profession of LIS. The *IFLA Guidelines for Professional Library/Information Educational Programs – 2000* and the 67th IFLA Council and General Conference in 2001 raised the visibility associated with KM within librarianship. By 2004 IFLA had established a new section devoted to KM.

Michael Koenig (2001), a well known proponent of integrating KM into librarianship, described one of the major opportunities for librarianship and KM: the inadequate training and user education associated with unsuccessful KM initiatives where benefits

failed to meet expectations. He proposed a number of recommendations surrounding the deployment of KM systems:

- design the training and education program before the deployment;
- train and support users in efficiently searching and effectively employing serendipity; and
- label training and education with the word ‘coaching.’

But his most poignant recommendation is to tell “sea stories” as a means to engage individuals in positive change behaviours (Koenig, 2001):

An extremely important point, one that deserves a major article in its own right is that user education is not just about the how to; it is also about the why. User education must also impart the why, why are KM systems being put in place and how will both the user and the organization benefit. The educator/trainer is therefore also a change agent. The most effective tool of the change agent/trainer is the "sea story," the story of the positive experience of others in using the systems. Don't just talk about the hypothetical advantages, give concrete examples; tell sea stories. (p. 10)

At the same conference, Anne Morris (2001) delivered a presentation that described a new KM program in the Department of Information Science at Loughborough University. Her study concluded with the need for the complementary integration of IM and KM programs:

Knowledge Management is linked to Information Management because knowledge is communicated and managed through information infrastructures that are used to locate, create, distribute, store and eventually discard information. Focusing more on utilizing intellectual capital within organizations, KM is nevertheless, a distinct discipline and one that is growing, substantially according to one agency. Information professionals already have the essential theoretical and practical skills to provide the IM element of KM. However, there are also opportunities for information professionals to use their skills in creative and imaginative ways to influence information strategies at boardroom level and corporate decision-making. (p. 7)

2.4.5 Relationship Between KM and LIS Professionals

Southon and Todd (2001) published a 2-part article in *The Australian Library Journal* describing the relationship between KM and LIS professionals. In the first part they discussed a six-month research project carried out between 1999 and 2000 to identify the perceptions of KM maintained by 56 LIS professionals in Australia. The viewpoints on the nature of KM reflected the ambiguity and lack of clarity in the minds of many of the

LIS professionals. Respondents perceived KM to be a wide spectrum of notions (2001, *Perceptions of Knowledge Management?*, ¶ 11):

- A renaming of information management,
- An extension of information management,
- A very broad program of which information management was only a part, and
- A poorly defined and problematic phenomenon.

In the second part of their work (Todd & Southon, 2001) they concentrated on the breadth of understanding and skills integral to effective KM:

Some emphasis was given to understanding the nature of human knowing, how our knowing grows, is constructed, is structured, and is integrated into already existing knowing, as well as to understanding how it can be acquired, documented, and integrated with other existing knowing. Complementing this emphasis was also an emphasis on understanding the knowledge dynamics of people— how people learn, think, and share ideas, how they consume information and impart their knowing, and understanding group dynamics that foster or limit the sharing of personal knowing. Also perceived to be important was an understanding of the organisation as a knowledge generating and using entity— organisational structures, cultures, dynamics, politics and values, and how knowledge creation and flow shape and are shaped by the organisation and its stakeholders. ...

The majority of the participants identified people-centred skills, such as negotiation, sharing, teamwork and communication, as important in effective knowledge management—skills that centre on the development of a collegial, collaborative and co-operative organisational environment where the exchange of knowledge and information is enabled and facilitated. (Understandings, ¶ 2; Skills, ¶ 2)

The membership of the Special Libraries Association (SLA) was surveyed in 1999 by Church about their changing job roles and responsibilities (Phase 5, 2000). The SLA respondents indicated that they were being challenged by the looming shift to KM taking place in the workplace. Special Libraries Association (2003) published and distributed its *Competencies of Information Professionals of the 21st Century* as a means to professionally situate the competencies of its members within the evolving knowledge-based organizations. By 2006 the SLA had legitimized KM to such an extent that a separate KM Division within the association was established.

2.4.6 Can Librarians Be Innovators?

The Library Association (LA) of the UK responded to a government white paper issued by the UK Department of Trade and Industry (1998) entitled *Our Competitive Future: Building the Knowledge Driven Economy*. The LA suggested that libraries must support innovation and that librarians will play a “central role in the mapping of organisational knowledge resources and encouraging a cultural shift in knowledge-sharing practices in business centres” (UK Library Association, 1999, Knowledge and Business, The Next Generation: Librarians, ¶ 5). Library and information professionals are trying to reengineer their education to cope with the transformation taking place because of KM initiatives.

Discontinuities are being felt throughout the LIS profession, and KM is one of the critical triggers affecting how the profession will evolve and what new competencies must be incorporated into the curricula (Beheshti, 1999; Durrance, 2003; KALIPER Advisory Committee, 2000; Rehman & Chaudhry, 2004; Sarrafzadeh, Afsaneh, & Martin, 2006, Summer; Tulloch, 2002). An extensive suite of competency matrices based upon job roles and responsibilities of KM professionals were described in detail in TFPL (1999) and Volume I and II of the U.S. Department of the Navy’s (2001a, 2001b) *Career Path Guide for Management of Technology, Information, and Knowledge*. Many of the skills and competencies described are parallel to those used to describe the roles and skills of special librarians.

The challenge is daunting because of the range of understanding of the elements that comprise KM, the expectations for skills that will be necessary to deploy KM, and the requirement for information professionals to reinvent their roles and move beyond being information custodians (Choo, 2000, 2004). No one program can possibly deliver the anticipated matrix of competencies necessary to teach, deploy, or carry out research on KM. The inference is that if KM is important, there is a need for a long-term vision, strategy, and commitment to make some of these competencies a core foundation for the education of LIS professionals. Many LIS leaders are trying to transform their programs in such a way as to invite increased enrollment and expose library professionals to the

immediacy that KM problems present in the academy, business, government, industry, and the non-profit sector.

For example, at Kent State University the Dean of the College of Communication and Information, the Director of the School of Library and Information Science, and the Director of the Information Architecture and Knowledge Management Program worked with the Chief Information Officer (CIO) in the Office of the Vice President of Information Services (T.J. Froehlich, personal communications, August 11, 2005). They tried to negotiate a new funding model for designing a job description for a resource that would fill dual roles:

1. a KM professional who will consult half-time to IS on university-based KM initiatives, and
2. a KM professor who will teach half-time for the Information Architecture and Knowledge Management Program.

This was a completely unique, complementary merger of skills and job roles where both organizations feel they needed to develop a mechanism to get graduate students onto internal university KM-based projects in order to develop on-the-job practical experience while integrating the practicums into the learning objectives of the curriculum. This represented a very unusual alliance of the academy and the administration in a field that Kent State University felt was having a unique effect upon the business of education delivery and research. This was certainly an innovative method to build the job stream for future knowledge managers at the university for its operational and administrative systems.

2.4.7 Has LIS ‘Missed the Boat?’

A close colleague of mine recently suggested tongue-in-cheek that the LIS field should have long ago taken the leadership role in KM as the architects and service delivery professionals for KM (R. Wood, personal communication, May 2005). Ralph and I have been friends and professional colleagues since the early 1970s when we were programmers and analysts on systems development teams at the Hudson’s Bay Company Data Processing Centre in Winnipeg, MB (Canada). He remained in data processing and

computer systems (what is now referred to as the IT/IM field) during the last 30 years, while I applied myself in other, parallel emerging fields.

He felt that the Computer Science discipline would have served well as the source for engineers for KM systems, and that the business schools should have provided the focus for KM business applications. He didn't feel that LIS professionals had the business savvy or assertive nature to lead KM. Ralph was one among at least a dozen IT professionals with whom I have kept in close contact since my early days in IT. He saw the challenge associated with the fragmentation and interdisciplinarity of the emerging field of KM.

I received multiple queries from private and public sector colleagues when I returned to the academy. They asked me why I would choose the School of Library and Information Studies instead of the Business School. My response was simple; regardless of how steeped KM is in the world of business and management, I felt that LIS still had the andragogical foundation and warrant to lead KM as the field matures.

2.5 Knowledge Management Research on Educational Programs—the Sutton Perspective

2.5.1 Topical Review of Global KM Programs

The first known paper on the analysis of KM programs was presented by Chen, Chiu, and Fan (2001) at the International Conference for Library and Information Science Educators (ICLISE) meeting in Petaling Jaya, Malaysia—organized jointly by a number of organizations, most notably IFLA. A copy of the proceedings has not been forthcoming; but a paper by the same three authors was subsequently published in the *Journal of Information & Knowledge Management* (Chen, Chiu, & Fan, 2002).

As part of my doctoral work I carried out a number of investigations. In 2002 I undertook a comprehensive topical review of global KM programs. The results were presented at the *Queen's University First Annual Knowledge Summit Doctoral Consortium* (Sutton, 2002a), which happened to be published at the same time as a KM education program analysis of 20 programs by Loon and Al-Hawamdeh (2002). The purpose of my topical

review was to initiate a preliminary exploratory cross-case analysis of the stream of courses offered by university programs of study that purported to teach KM. Appendix B contains a list of the institutions identified as offering undergraduate, graduate, and PhD programs associated with KM.

In that study KM was loosely defined and encompassed any course groupings where the term KM predominately appeared in a title, or programs with titles that are commonly included in discussions of KM, such as business intelligence, competitive intelligence, intellectual capital, knowledge engineering, knowledge science, knowledge systems, or knowledge ecology. Summarized tabulations were prepared for the geographical and disciplinary locations of the 79 identified KM programs offered by 47 institutions.

My 2002 investigation demonstrated that a critical mass of KM program offerings existed but there was little consistency on what was the andragogical foundation of an actual KM program. At academic conferences and poster sessions where I presented statistics from the study, audiences acknowledged surprise and astonishment at the high volume of KM program offerings (Sutton, 2002b, 2003, 2004).

2.5.2 Typology of KM Programs

The 2002 study suggested that KM was undeniably an *international* phenomenon—definitely not limited to North America or even strictly to Europe. In that preliminary analysis of regional distribution of KM programs, 42% of the programs were offered in the USA followed by 24% in the UK (see Figure 2-1). These programs were predominately offered by LIS schools. This focus on LIS schools differed from that reported by Ruth, Shaw and Frizzell (2003) where KM teaching predominated in schools of business and engineering.

Three different sub-groupings (Bachelor, Master's, and PhD degrees) were summarized. At that time Bachelor and PhD programs were rare, although the predominate lead of 60% in PhD KM program offerings was held by the USA. The UK garnered second place, followed closely by Canada and the Other region categories. Master's program offerings predominated, comprising over 80% of all KM educational offerings.

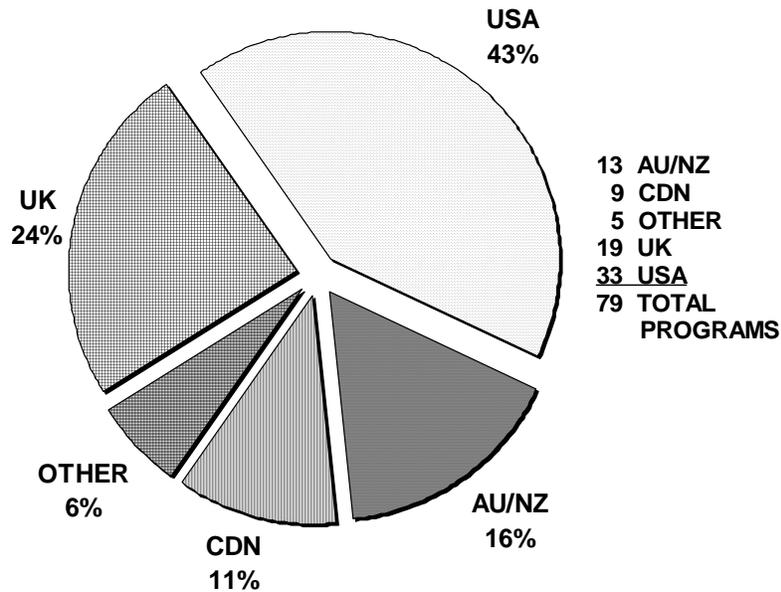


Figure 2-1 Overall Tabulation for KM Program Offerings (By Region)¹

Clustering of the offerings by field indicated that the USA led with 37% of the offerings, most of them offered within LIS schools, computer science departments, and business schools (see Figure 2-2). The UK and Australia/New Zealand (respectively in second and third place) followed the USA in prospective offerings. Almost half (46%) of all KM Master's programs were located in the UK and Australia/New Zealand.

Overall the tabulations of course titles presented an interesting topography. A closer look at what was actually being offered was very revealing. I randomly selected three university sites, each from a different country, for additional analysis of the actual course titles to ascertain similarities and differences (see Table 2-3-1, which is continued on 2-3-2). The American University program consisted of concentrations as well as a wide choice of electives, which made its course offerings seem more voluminous, even though the appropriate selection of options and electives would fit into a two-year program. Six of the courses between the Australian University and the American University were a close match, while only four courses matched between the Australian University and the

¹ AU/NZ = Australia/New Zealand, CDN – Canada, UK = United Kingdom, others are self explanatory.

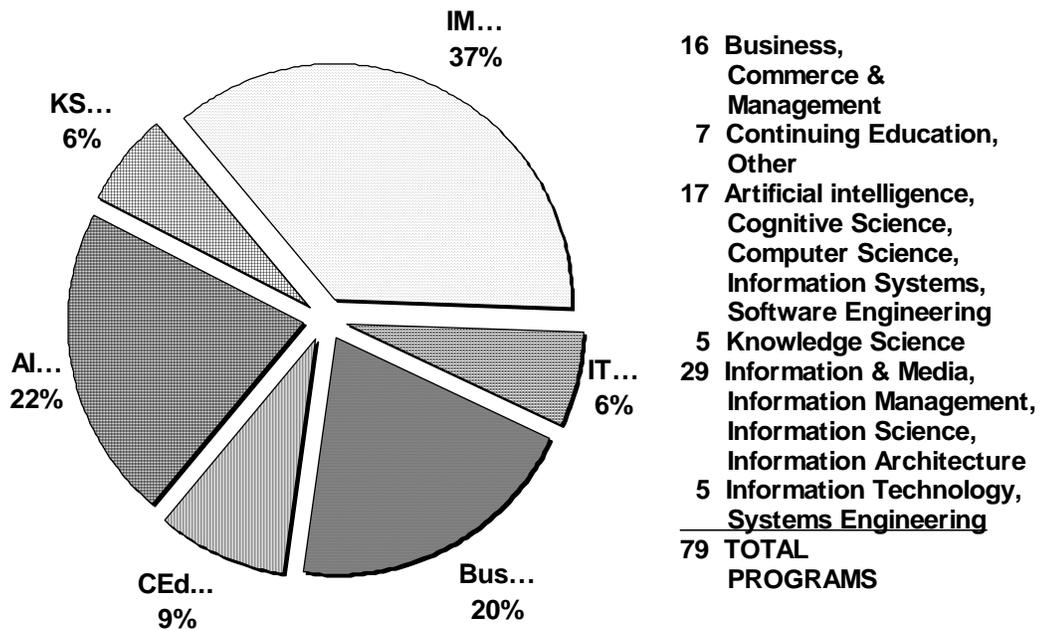


Figure 2-2 Overall Tabulation for KM Program Offerings (By Field)

Australian University Course Titles	USA University Course Titles	Canadian University Course Titles
005702 Knowledge Management Principles	LIS 880 Knowledge Management	
005703 Knowledge Management Processes		KM 610 Intellectual Capital and Intellectual Property
005706 Knowledge Management Systems	GSB 574 Knowledge Technologies	KM 540 Technologies for Knowledge Management
005704 Knowledge Management Leadership		KM 530 Culture and Leadership for Building Knowledge Capital
005705 Knowledge Management for eBusiness		KM 510 KM Strategies in the Global Business Environment
005707 Advanced Knowledge Management Systems	GSB 789 Advanced Topics in Knowledge Management	
005189 Information Retrieval	LIS 750/GSB 569 Information Storage And Retrieval	
005701 Information Analysis & Retrieval	LIS 754/GSB 565 Information Systems Analysis And Design I	
005708 Issues in Online Management	LIS 745 Searching Electronic Databases	

Table 2-3-1 Cross-Case Comparison of Convergent Course Titles from Sample Master's KM Offerings

Australian University Course Titles	USA University Course Titles	Canadian University Course Titles
	GSB 622 Management Information Systems	KM 550 Organization and Management Information Systems
	GSB 612 Accounting	MB 525 Financial and Managerial Accounting
	GSB 615 Financial Management	MB 530 Corporate Finance
	GSB 611 Economics For Managers	MB 605 Global Issues in Management: Management Transformation for the New Economy
	GSB 614 Organizational Behavior	MB 515 Organizational Relations
	LIS 799 Practicum/ GSB 798 Management Practicum	MB 695 Organizational Consulting Project
	Competitive Intelligence for Management Decision-Making	MB 550 Strategic Management

Table 2-3-2 Cross-Case Comparison of Convergent Course Titles from Sample Master’s KM Offerings

Canadian University. Finally, between the American University and the Canadian University there were eight apparent matches, but only two appeared to focus specifically upon KM.

The similarities I discovered suggested that there was a provisional clustering of KM courses based upon their titles but the clustering was not necessarily consistent across the three universities. The Canadian University had six course titles that were distinctively different from both of the two other sites. The American University had 14 course titles that were also distinctively different from both other sites.

2.5.3 Content Analysis of KM Program Titles and Descriptions

My subsequent content analysis study of course titles in KM programs (Sutton, 2004) provided some interesting new insights. I executed a cross-case analysis of the topical titles of KM courses. These were derived from 23 KM Master’s program descriptions available on the Internet. This mosaic of topical elements of KM educational programs helped to shed some insight into the process of sensemaking that program designers might go through to design a KM program.

The titles of courses in the 23 separate KM programs were analyzed for frequency of occurrence of words and collocated phrases. The words *information*, *knowledge*, *management*, and *systems* comprised the top 25% of words in the titles. Table 2-4 lists the next 25% of the most frequently occurring words. These words certainly suggested an information systems/technology and business/management focus (or bias) within the titles. Table 2-5 displays only those words that occurred once within and across the titles, which is of particular interest. These singular occurrences of words suggested the uniqueness of many of the course titles across numerous programs, and alluded to the occurrence of a number of words in the titles that could be easily related to the LIS field (e.g., *archives*, *audit*, *classification*, *metadata*, *preservation*, *recordkeeping*, *representation*, and *standards*).

Words	Words	Words
advanced	engineering	policy
analysis	intelligence	project
business	leadership	research
capital	learning	services
competitive	managing	strategic
design	methods	technologies
development	organization	technology
electronic	organizational	

Table 2-4 Second Quartile of the Most Frequently Occurring Words

Words	Words	Words
architectures	knowledge-based	standards
archives	metadata	statistics
assets	methodology	strategy
audit	models	teams
classification	philosophy	techno-entrepreneurship
commerce	politics	telecommunications
consulting	preservation	transformation
e-commerce	recordkeeping	understanding
human-centred	representation	warehousing
human-computer	security	

Table 2-5 Least Occurring Words

Additionally I analyzed the occurrence of collocated 2-word and 3-word clusters. Although a relatively simple analysis, these frequency occurrences were very revealing. The most frequently occurring collocated 2-word clusters suggested that the most common topics in the titles of KM courses were *knowledge management, information systems, research methods, management systems, competitive intelligence, human resource, and management information* (see Table 2-6). These terms also inferred a commonality of instruction between KM topics, research, and management/business themes.

Term	% Freq.	Term	% Freq.
Knowledge Management	56	Information Design	<3
Information Systems	10	Information Policy	...
Research Methods	9	Information Services	...
Management Systems	8	Intellectual Capital	...
Competitive Intelligence	5	Knowledge Capital	...
Human Resource	4	Knowledge Media	...
Management Information	4	Organizational Behavior	...
Business Information	<3	Project Management	...
Database Management	...	Systems Analysis	...

Table 2-6 Occurrence Frequency of Collocated 2-Word Terms in KM Course Titles

Consequently, I also analyzed the most frequently occurring collocated 3-word clusters (see Table 2-7). KM aligned closely with IM terms and business/management terms, but most significantly with human resources management (HRM) terms. The HRM terms are often touted by KM pundits as the most critical of elements in KM projects, systems, and tools.

Term	% Freq.
Information and Knowledge	5
Knowledge Management Systems	4
Management Information Systems	4
Human Resource Management	4
Database Management Systems	3

Table 2-7 Occurrence Frequency of Collocated 3-Word Terms in KM Course Titles

Additional analysis was executed on the corpora of the actual KM course descriptions, not just the titles. The top seven frequently occurring single terms were, not surprisingly, *information, knowledge, management, systems, business, design, and research* (in that order). The top seven frequently occurring collocated 2-word clusters were:

- *knowledge management,*
- *information systems,*
- *competitive intelligence,*
- *information technology,*
- *intellectual capital,*
- *information management, and*
- *intellectual property.*

Finally, the top seven frequently occurring collocated 3-word clusters encompassed:

- *information and knowledge,*
- *management of information,*
- *theory and practice,*
- *human resources management,*
- *knowledge management systems,*
- *tools and techniques, and*
- *enterprise resource planning.*

Overall, this data suggests a close alignment of KM to information management, systems, tools, and HRM. These are preliminary findings I intend to use in order to carry out further study of this data across more KM programs. I will eventually give special attention to the single-occurring words throughout all of the KM course description corpora. These words may suggest interesting differentiators or innovations for future KM program offerings.

2.5.4 Sources for Finding Information on KM Programs

Where can we learn about KM program offerings? In 2002 only three potential meta-sources for KM courses and educational programs were available on the Internet. These sources included:

1. George Mason University’s School of Public Policy, which offered a webpage through the International Center for Applied Studies in Information Technology that listed a limited number of academic degree programs and locations (George Mason University, 2006);
2. Peter Gray, at that time a PhD Student at Queen’s University, who offered a list of numerous KM courses and syllabi (Gray, 2005); and
3. Denham Grey, a KM pundit, who offered a site containing an ad hoc list of KM courses (Grey, 2006).

By 2007 these sources had not changed much. New sources offering any additional entry points to locating KM programs and courses are scarce. Regretfully, none of the three sites presented a comprehensive and inclusive view of all available concentrations, courses, and programs.

2.6 Knowledge Management Educational Programs within the Bigger Picture—the Broader Educational Perspective

Trying to situate this study within the field of Education is difficult. The term educational reform and change have a multitude of different meanings, depending upon which administrator, student, or educator is asked to comment on it. Table 2-8 contains a brief listing of various situations currently effecting the higher education field.

Situation	Situation	Situation
accountability	decreasing state/provincial funding	mobile computing
adult education	decrease in foreign student visas	new curriculum frameworks
aging student population	distance education and elearning	outcomes-based education
assessment standards and state/provincial testing	faculty retirements	professionalism and credentialing
curriculum collaboration	increasing tuitions	social mobility
declining enrollments	lifelong learning	

Table 2-8 Various Situations Currently Affecting the Higher Education Field

These are only a few areas that are currently impacting higher education. How can KM education be situated within these? KM education fits into an evolving trend in adult learner/life long learner education, as described by Metcalfe (2006), OECD (2001a), and Whitman (2003).

Life long learners are leveraging their demands for what they see as important and relevant in the curriculum. Other topics that relate to KM education are:

- commoditization of educational offerings,
- credentialing of professionals,
- market demand for educational specialization, and
- the impact of consumerism on learning.

Hayes and Wynyard (2002) and Naidoo (2003) described the commodification that has taken place across many university programs. According to the authors, educational programs have become a market commodity and students expect education to be “dumbed down.” KM programs may find themselves on hard times trying to pander to larger enrollments of students who may be technologically illiterate, under-prepared, and lack an appreciation of the business issues encompassing KM. High standards are required of KM graduates, yet high standards may deter larger enrollments.

Oblinger and Verville (1998) described the acute need by businesses of:

- problem identifiers, who support customers in understanding their needs;
- problem solvers, who continually “search for new applications, combinations, and refinements capable of solving emerging problems” (p. 4); and
- strategic brokers, who link the problem identifiers with the problem solvers.

They alluded to the emergence of new professionals with the capability to accomplish complicated tasks, lead teams, master specialized tacit knowledge, and develop a proficiency in the management of information and knowledge. Many of the KM programs have embraced these same objectives for their KM graduates. Moreover, the graduates themselves are anticipating that the completion of a graduate degree will place them on the road to being identified as a professional (Gold, Rodgers, & Smith, 2001).

Students appear to be willing to invest in credentialing if it will identify them as a professional.

Naidoo and Jamieson (2005) described the impact of consumerism on teaching and learning. They reported that “students will ... demand high quality provision and will apply pressures on universities to make courses more relevant to the skills they require for the workplace” (p. 268). This claim has been reflected in the increased demand by employers and students for high quality competencies and skills associated with knowledge work specialization. Although “very little research has been conducted on the effects of consumerism on learning and teaching in the UK” (p. 269), KM programs are responding to consumer market demands and the call for specialization.

The previous review of the literature helped to support the justification of an approach based upon inductive and case study research. The emerging field of KM is not yet stable and continues to evolve. Elements derived from the literature review will be used to frame the data collection, structured interview construction, and case design. The proposed conceptual framework for the study is described in the next chapter, Conceptual Framework and Contextual Paradigm.

3 Conceptual Framework and Contextual Paradigm

3.1 *Discovering a Conceptual Framework and Contextual Paradigm*

The KM field has produced a large volume of conceptual frameworks for looking at knowledge and ‘knowledge about knowledge’ (meta-knowledge). Other related business, management, and library science disciplines have also proposed numerous conceptual frameworks from which to choose. When I began my dissertation proposal in 2002 the volume of KM frameworks were probably less than 25% of their number today, which I would estimate to be about 200. Although a conservative estimate, this figure has been affirmed by others such as Dalkir (2005), Koenig and Srikantaiah (2004), Srikantaiah and Koenig (2000), and Holsapple and Joshi (2002c, 2003).

I surveyed numerous frameworks that would suit the study of the phenomenon of KM and KM education, based upon their prominence in the literature. My purpose was an historical examination of the chronological sensemaking, knowledge creation, and decision-making experiences of the KM program leaders and designers of the graduate educational programs. This scope furnished me with winnowing and selection criteria to filter the frameworks into a group that were based upon some convergence of sensemaking, knowledge creation, and decision-making.

My research questions suggested that a syncretic theoretical framework was required that could relate all three elements in a balanced fashion. As I surveyed models and frameworks I discovered Dr. Chun Wei Choo’s Knowing Cycle (CKC) conceptual framework (see Figure 3-1), which was described in his book *The Knowing Organization: How Organizations Use Information to Construct Meaning, Create Knowledge and Make Decisions* (1998). My conceptual framework became crystallized and formalized and the proposal subsequently approved and endorsed by my advisor.

Next, I embarked upon the activity of locating a contextual paradigm that would provide a theoretical foundation for my data collection, analysis, and eventual interpretation of

the findings. The contextual paradigm suggested an *exploratory*, and to some extent, an *explanatory* study. *Exploratory* studies are deemed essential when unexplored territory is being investigated, and such studies usually result in original insights about *what* is going on that may advance theory associated with a new subject or raise new questions. KM was certainly an unexplained territory, and through my research I planned to advance the knowledge associated with the emerging field of KM and KM education.

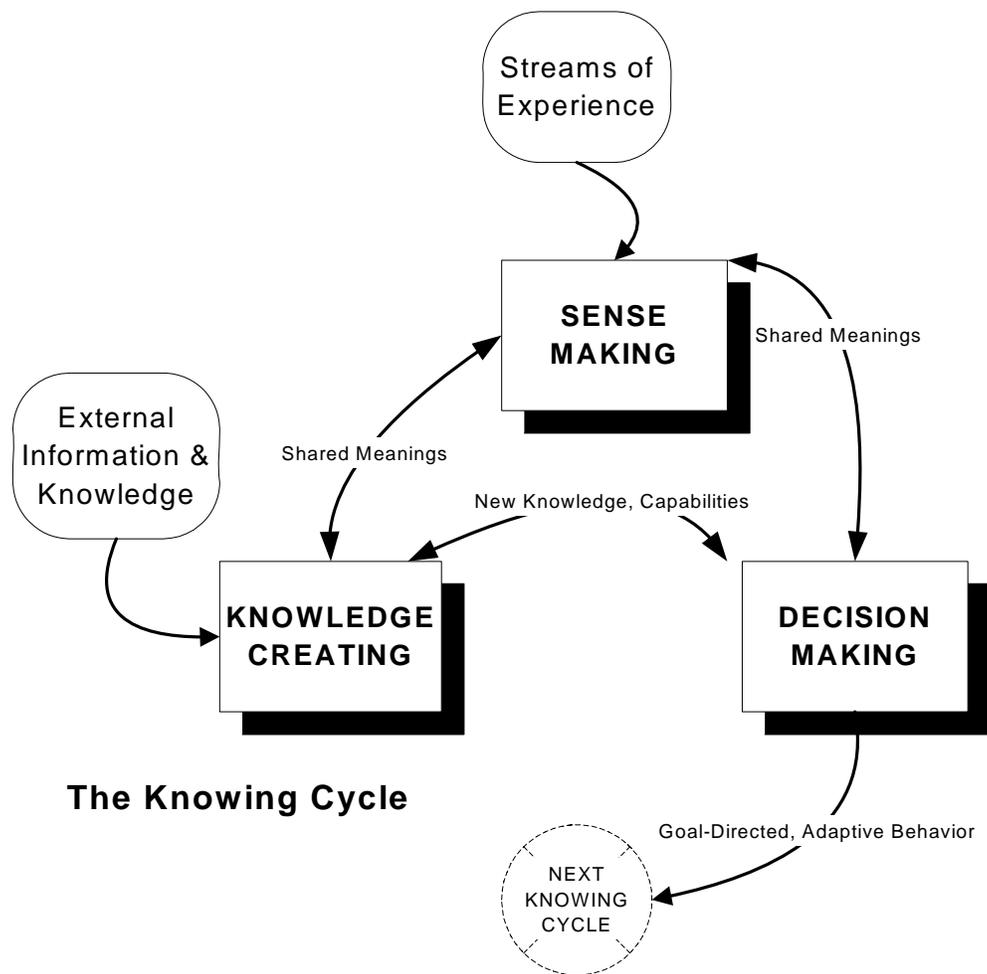


Figure 3-1 The Knowing Cycle, adapted from Choo, 1998, p. 18

I wished to explore and explain the sensemaking processes, decision-making processes, and new knowledge constructed by the KM program designers. I also wanted to derive information about KM and KM education from supplementary material collected in the

proposed literature review. The purpose of an explanatory study was to seek an explanation of the *how* questions behind the individuals, group, and organizational behaviour underlying the KM programs.

Thus, since I could not control or manipulate the events that took place from an empirical perspective, I decided, instead, to concentrate on the historical record through systematic interviewing and a review of the documents available, as suggested in Yin (1994). My choice of the case method permitted me to examine contemporary events associated with the very recent foundation of two KM graduate level educational programs. The study was revealing itself as a qualitative study, and one that would require additional techniques or theory for detailed data analysis.

I had considered locating a ‘budding’ KM program and documenting its progress with ethnographic methods. However, because of the competitive nature of these specific academic programs, the long incubation period for such programs, and the low visibility of KM programs in their early stages, I was unable to locate a new KM program where an ethnographic study might be undertaken. I had also considered using hermeneutics and phenomenology, but felt less comfortable with presenting potential results with these methods because they are seldom used in business, management, or LIS research. Thus, a robust foundation for my research methodology and design eventually emerged from the syncretic unification of Choo’s conceptual framework with case and grounded theory analysis.

3.2 Conceptual Framework

I concentrated on the use of the *Knowing Cycle* conceptual framework (Choo, 1998, p. 18), which suggested the use of models that were premised on individual or group construction of reality, i.e., sensemaking theory, knowledge creation, and decision-making. In order to scope my study into a manageable dissertation, my emphasis was on the sensemaking component. The knowledge creation and decision-making components applied only where significant data were discovered.

In the past decade researchers have been confronted with diminishing resources within universities. The planning, investment, and decision-making processes for a KM educational program were limited, especially with the potential risk associated with an emerging field. Time pressures for offering a viable program also constrain extensive analysis and appraisal of data about potentially competing programs, while limiting evaluation of too many existing alternatives. The timing of a decision to offer a KM program could conflict with human, informational, financial, or physical resource limitations in an institution. Decisions about new programs often appear to be made from incomplete data and information, and may not necessarily correspond to the goals of the institutions.

Choo's Knowing Cycle presented a model for discerning the information elements and processes that could feed into the organizational action comprising the conception, design, and development of a KM educational program. Organizational action within the *knowing organization* was achieved through three information processes, each resulting in an information stimulus proceeding from the outside environment into the action space. The three stage information processes were:

- sensemaking
- knowledge creation, and
- decision-making.

Action resulted from the concentration and absorption of information from the external environment through each successive mode of information use. First, meaning was socially constructed as information and was filtered through the sensemaking process. The sensemaking stage attempted to "make sense" of the information streaming from the external environment. Priorities were identified and set, providing a 'significance' filter for the information. Common interpretation was constructed by the individuals from the exchange and negotiation of information fragments combined with their previous experiences and knowledge.

Second, the individual participants created new knowledge about the external world through the transformation of their individual knowledge into sharable information and knowledge. Dialogue, discourse, sharing, storytelling, and codification of personal information and knowledge between the individuals characterized the knowledge creation stage.

Third, a threshold was reached at some specific point when the organization as a whole was prepared to act in a rational manner and choose an alternative based upon the organization's inherent goals, objectives, and strategy. The decision-making stage relied upon rational decision-making models to identify and evaluate alternatives by processing the information and knowledge collected thus far. A subsequent cycle was spawned when the action chosen changed the external environment and impacted ongoing decisions related to the original choice.

The three organizational information processes created the *knowing organization*, as posited by Choo. The information processes relied upon specific techniques and methods to construct, transform, and manage the underlying information and knowledge: sensemaking, knowledge creation, and decision-making.

3.2.1 Sensemaking Theory

Karl Weick (1979) in the *Social Psychology of Organizing* (and subsequently in Weick, 1995, 2001) proposed a micro-level theory called sensemaking. The theory described how performance could be improved within well-structured and relatively stable organizational environments (as described in Nilan & D'Eredita, 2004). Weick suggested methods for tangible metrics to coordinate the actions emerging from chaotic episodes. Weick proposed that chaos could be transformed into sensible and orderly processes through the shared interpretation of the individuals in an organization. In these loosely coupled systems individuals constructed their own representation of reality. Sensemaking, like *knowing*, can only take place after the decision or event has transpired.

An individual tries to make sense of the situation by comparing the current event with past experiences through a retrospective view of the situation.²

Weick (1979) described the sensemaking process in an organization through four tightly integrated processes within a feedback circuit (see Figure 3-2):

- ecological change,
- enactment,
- selection, and
- retention.

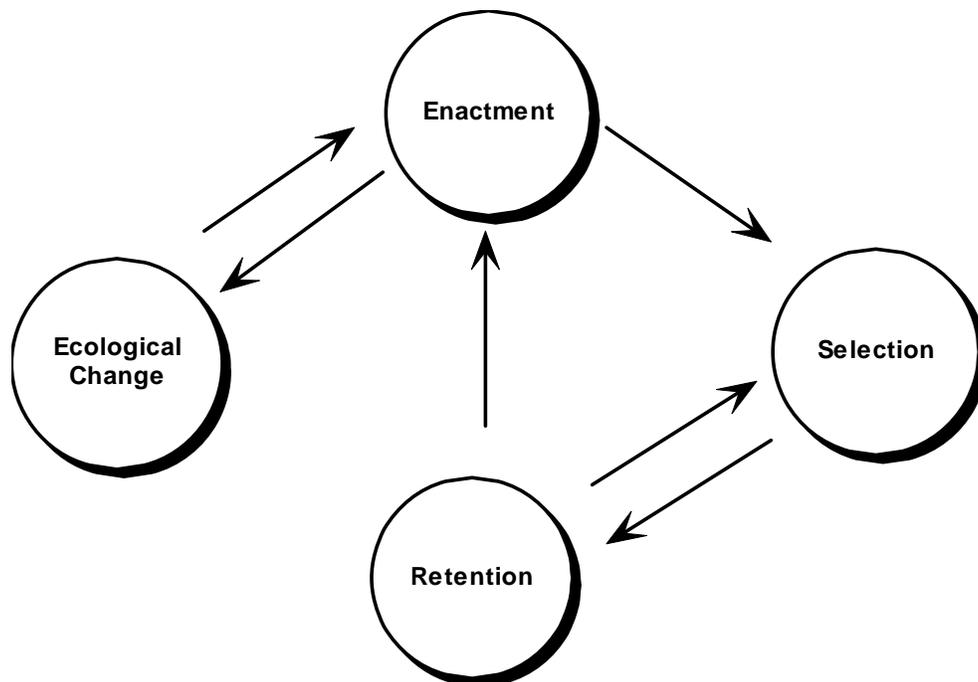


Figure 3-2 Integration of Sensemaking Processes,
adapted from Weick, 1979, p. 132

² A second prominent methodology of sensemaking exists and is promoted by Dr. Brenda Dervin and spelled “Sense-Making” instead of “sensemaking” (Dervin, 1983, 1998). Dervin’s approach is a theory that explains information-seeking behaviour. Her methodology was developed to help individuals bridge the gaps in cognitive challenges presented to them when they are trying to communicate an information-seeking problem to others. Choo was aware of the differences proposed within the work of Dervin and Weick, and has drawn upon both sources in his many articles and books. Choo emphasized the organizational performance elements in his Knowing Cycle instead of specific information-seeking behaviour associated with overcoming gaps in understanding. Consequently, I chose Weick’s sensemaking theory for my investigation, not Dervin’s, because of Weick’s foundation in organizational science and the direct applicability of his approach to teams of individuals coordinating and designing organizational solutions to teach KM.

A change in the environment external to an organization disturbed the flow of information to the participants. The significance of the change triggered an ecological change in the organization. Organizational actors enacted their environment by attempting to scrutinize elements of the environment, e.g., they: “Construct, rearrange, single out, and demolish many 'objective' features of their surroundings. ... They unrandomize variables, insert vestiges of orderliness, and literally create their own constraints” (Weick, 1979, p. 164).

The data resulting from the process of enactment clarifies emerging issues for the selection process, where attempts were made by individuals to interpret the rationale for the observed and enacted changes. Finally, the interpretations are retained in personal memories or documented in the retention process and furnish the organization with an organizational memory of successful and unsuccessful sensemaking experiences. Eventually the retained information and knowledge may be reused in future situations to interpret new changes and stabilize individual interpretations into an organizational view of events and actions. The uncertainty associated with ambiguous, unclear, or poorly defined information was reduced through an iterative, common interpretation process until the meaning had been distilled to an agreed upon unequivocal interpretation, or an agreed upon ambivalence.

Weick (1979) suggested that: “Sensemaking is largely solitary in the sense that structures contained within *individual* minds are imposed on streams of *individual* elapsed experience that are capable of an infinite number of *individual* reconstructs” (p. 142). Weick’s theory could help frame and interpret the sensemaking experiences transpiring within the minds of the KM program participants. Additionally, Weick’s theory could help interpret the resulting social construction of meta-knowledge about the phenomenon of KM and how it should be taught. Sensemaking will serve my study in a number of critical ways that will assist me to (Klein, Moon, & Hoffman, 2006, p. 72):

- comprehend what was going on;
- improve the plausibility of alternative explanations and explain anomalies;
- clarify the past events described by the informants;

- suggest future choices and decision streams for other universities considering the construction of KM programs;
- explore the information collected with the support of a shadow ‘guide;’ and
- promote the achievement of common ground in understanding the social construction activities, not just the collection of individual perspectives.

The two remaining components of the Knowing Cycle are described below in order to provide a comprehensive understanding of all the model’s components. However, a number of critical constraints encountered once the study began, i.e., lack of available time by participants, lack of comprehensive documentation, poor personal and corporate memories, and lack of recollection of the facts. Knowledge creation and decision-making were not addressed at the detail initially envisioned. These two processes may be candidates for more detailed analysis in future cases where the institutions retain a higher volume of hard copy and digital documentation (organizational memory).

3.2.2 Knowledge Creation Theory

The knowledge creation process was directed through the shared interpretations defined by the participants during the sensemaking process in terms of a KM program vision. The knowledge creation process widened the spectrum of potential choices for decision-making through the acquisition of new knowledge and competences. The results fed the decision-making process with innovative strategies that extended the organization's capability to make an informed, rational decision.

Choo drew upon the knowledge creation theory of Nonaka and Takeuchi (1995) where case studies of successful knowledge creation described the integration and relationship in the organization between *tacit* and *explicit knowledge*. *Tacit knowledge* in the heads of the participants was difficult to formalize and codify³. *Explicit knowledge* was the *tacit*

³ Davenport, De Long, & Beers, (1998) further extended this description, emphasizing the human element: “Unlike data, knowledge is created invisibly in the human brain, and only if the right organizational climate can persuade people to create, reveal, share, and use it. Because of the human element in knowledge, a flexible, evolving structure is desirable, and motivational factors for creating, sharing, and using knowledge are very important. Data and information are constantly transferred electronically, but knowledge seems to travel most felicitously through a human network” (p.56).

knowledge that had been codified and transmitted between individuals as well as groups. A complementary relationship existed between these two types of knowledge. The greatest value to the organization was contained in the persistence of the *tacit knowledge* codified into *explicit knowledge*. Innovation, according to Nonaka and Takeuchi, was triggered by the transformation and conversion of *tacit to explicit knowledge*, thus establishing a higher probability of success (and potential profit) for the organization.

The cyclic knowledge conversion process from *explicit to tacit knowledge* consisted of four stages (see Figure 3-3) (Nonaka & Takeuchi, 1995, p. 62–72):

- **socialization**—tacit knowledge is acquired by sharing personal experiences resulting in *sympathized knowledge*;
- **externalization**—metaphors, analogies and models are used to convert tacit knowledge into explicit *conceptual knowledge*;
- **combination**—explicit knowledge is generated through communication and cross-fertilization of messages from other organizational entities resulting in *systemic knowledge*; and
- **internalization**—shared mental models and explicit work practices are internalized as tacit knowledge to build new *operational knowledge*.

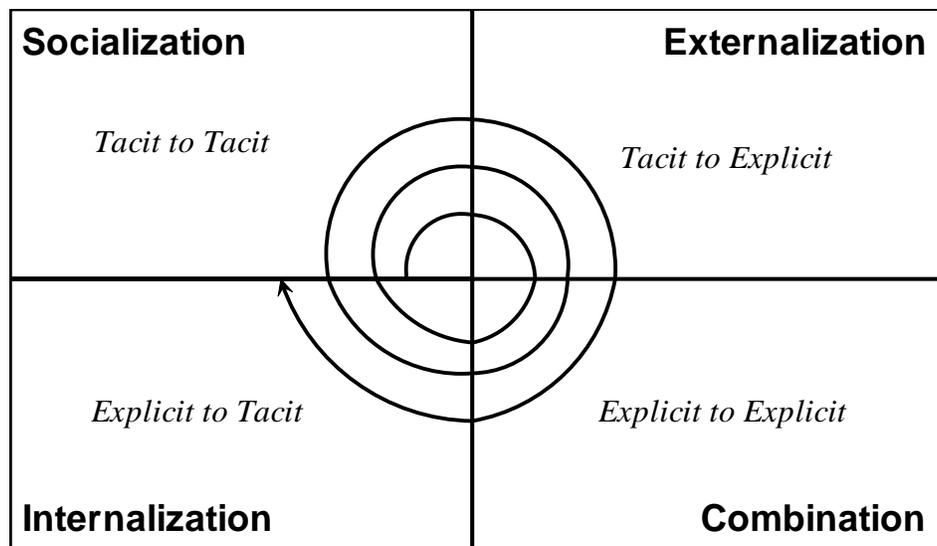


Figure 3-3 Knowledge Conversion Process,
adapted from Nonaka and Takeuchi, 1995, p. 71

The results from the knowledge creation stage invigorate the decision-making process with unique innovative approaches to supporting a satisfactory (if not optimal) decision.

3.2.3 Decision-Making Theory

A widely respected organizational school of thought theorizes that information plays a significant role in decision-making and problem-solving (Cyert & March, 1963; March, 1988; March & Olsen, 1979; March & Simon, 1958; Simon, 1957; Weick, 1979). The Carnegie School of organizational decision theory was spawned in the 1940s and 1950s by a number of theorists interested in how organizations came to make particular decisions.

The concept of *bounded rationality*—limited or constrained rationality—was first proposed by Simon (1957):

The capacity of the human mind for formulating and solving complex problems is very small compared with the size of the problems whose solution is required for objectively rational behavior in the real world—or even for a reasonable approximation to such objective rationality. (p. 198)

He suggested that the mind has a critical challenge in coping with the complexities of the world, and, thus, constructs a simple mental model of reality and tries to work within that model. Even though there may be weaknesses associated with the simple model, the individual who has constructed the model tries to act rationally within it, regardless of ambiguities or contradictions. Simon outlined the ways in which an individual can be bound in a decision-making process (1957, p. 323):

- he is limited by his unconscious skills, habits and reflexes,
- he is limited by his values and conception of purpose, which may diverge from the organization goals,
- he is limited by the extent of his knowledge and information.

The organization itself does not constrain the individual decision-makers; but, instead, limits the decision premises that influence the individuals. Neumann explains:

If the theory of chess were really fully known there would be nothing left to play. The theory would show which of three possibilities ["white wins," "tie," or "black wins"] actually holds, and accordingly the play would be described before it starts...But our proof, which guarantees the validity of one (and only one) of these

three alternatives, gives no practically usable method to determine the true one. (as quoted in Simon, 1957, p. 25)

March and Simon's (1958) book, *Organizations*, described a detailed theory concerned with the management of risk and uncertainty during the decision-making process. March and Simon studied organizations and their decision-making processes in terms of limits with *satisficing* criteria, i.e., the ability to make decisions where available information is constrained but there is enough data to make a good enough or *satisficing* choice. They proposed that organizations and their managers were bound by their own ability to rationalize and identify *satisficing* solutions. Decisions could then be analyzed where constraints imposed on the stakeholders limited the rational basis for the choice. The possibility of non-rational decisions suggested that managers were not always rational, and were often irrational. Thus was conceived *bounded rationality theory*.

The lack of facts and information in the two cases related to decision-making will limit the capability to describe the details of these processes in this study. The framework of *bounded rationality theory* is a useful framework when decision-makers make a rational choice based upon limited, unclear, or ambiguous criteria. Rationality criteria emerge from the alternatives and the method of choosing alternatives that are in 'proper accord' with the preferences, and from beliefs of the individuals or the group involved in the decision. The *bounded rationality theory* has been accepted in the organizational and management science disciplines as a means of interpreting decision-making behaviour under less than ideal circumstances (March, 1988).

3.3 Contextual Paradigm

3.3.1 Context of Qualitative Research

Since the primary element in the chosen conceptual framework is based upon the social construction of meaning (Choo, 1998, 2002; Weick, 1979, 1995, 2001), then the study will be situated within the context of qualitative research. This context implies an emphasis on processes and meanings that are not as precisely examined as quantitative measurements. Qualitative research focuses on the social construction of reality: "[It] seeks answers to questions that stress how the social experience is created and given

meaning. In contrast, quantitative studies emphasize the measurements and analysis of causal relationships between variables, not processes ... within a value-free framework” (Denzin & Lincoln, 1998a, p. 8).

A paradigm is a “basic set of beliefs that guides action” (Guba, 1990, p. 17). A paradigm is a three-fold interpretive framework based upon three assumptions (Denzin & Lincoln, 1998a, p. 201):

- *ontological assumption*—the ontology of the researcher—(the means used to describe the world),
- *epistemological assumption*—the epistemology of the researcher— (the relationship between subject and object in the world), and
- *methodological assumption*—the methodology of the researcher—(the method used to gain knowledge of the world).

Thus, a qualitative research context situates the research within a spectrum of four major categories of interpretive social science paradigms—from positivist/post positivist through constructivist–interpretive, critical, and feminist–post structuralist paradigms (Bogdan & Biklen, 1998; Denzin & Lincoln, 1998a, 1998b, 1998c; Gephart, 1999; Greene, 1990; LeCompte, 1990).

3.3.2 Constructivist Paradigm

The constructivist paradigm places particular emphasis upon individuals participating fully in the social construction of their own reality, i.e., reality is an individual construct and such constructs “do not exist outside of the persons who create and hold them” (Guba & Lincoln, 1989, p. 143; Heron & Reason, 1997). By interacting with the world, a constructivist constructs, tests, and refines representations that will help make sense of the world. Denzin and Lincoln (1998a) proposed that: “The constructivist paradigm assumes a relativist ontology (there are multiple realities), a subjectivist epistemology (knower and subject create understandings), and a naturalistic (in the natural world) set of methodological procedures” (p.27). Findings are usually presented in terms of the criteria of grounded theory (Strauss & Corbin, 1998).

Lincoln (1990) suggests a very useful description of constructivism that was used as the contextual paradigm for this study:

The constructivist paradigm ... [has] as its central focus not the abstraction (reduction) or the approximation (modeling) of a single reality but the presentation of multiple, holistic, competing, and often conflictual realities of multiple stakeholders and research participants (including the inquirer's). Further, in the presentation of those multiple realities (social constructions), a vicarious déjà vu experience should be created in the reader. This vicarious experience, in addition to providing certain technical help to other researchers (e.g., in the presentation of thick description, which enables judgments regarding transferability to be made), should aid the reader in understanding the nuances and subtleties of conflict and agreement in this place and at this time. Further, the written report should demonstrate the passion, the commitment, and the involvement of the inquirer with his or her co-participants in the inquiry. (p. 73)

Additionally, Confrey (1990) suggested another succinct summary of constructivism that supports my understanding of the paradigm:

Put into simple terms, constructivism can be described as essentially a theory about the limits of human knowledge, a belief that all knowledge is necessarily a product of our own cognitive acts. We can have no direct or unmediated knowledge of any external or objective reality. We construct our understanding through our experiences, and the character of our experience is influenced profoundly by our cognitive lens. (p. 108)

Since any resulting theory from this research must still be posited within a social science paradigm, the proposed contextual paradigm of constructivism will:

1. provide an overarching social science framework for exploring and interpreting a phenomenon, such as KM,
2. reflect the categories and assumptions of the particular world view,
3. establish the macro-theoretical means to interpret and analyze the research problem, and
4. furnish suggested perspectives for interpreting the study's findings, explanations, and conclusions.

Numerous flavours of constructivism have emerged including radical, social, physical, evolutionary, post-modern, social constructionism, and information-processing constructivism (Ernest, 1995, p. 459; Heylighen, 1993, 1997). Heylighen's (1993) explanation of social constructivism was that it "sees consensus between different subjects as ultimate criterion to judge knowledge. 'Truth' or 'reality' will be accorded

only to those constructions on which most people of a social group agree” (¶ 8). Social constructivism declares that truth and reality are partially constructed within a social context, and are thus, malleable, depending upon the particular social context. Social constructivists have two key foci:

1. the examination of social networks of meaning that underlie a construction, and
2. the place of social relations in constructing truth and reality.

I constructed an interpretation of the KM educational program phenomenon within this social constructivist paradigm. I collected my perceptions of the sensemaking processes that transpired amongst the informants involved in the KM program conception, design, and development. Of course, my effort to construct meaning was incomplete, since I had not directly participated in the experience of sensemaking. However, the attempt to understand, represent, explain, and describe the sensemaking process generated new interpretations of the KM phenomenon—the instigator in the development of a new and unique educational program.

The nature of the conceptual framework and the adopted elements create an imperative that advocates a specific design and method of investigation for a constructivist paradigm (Diesing, 1971). The requisite acts of discovery and interpretation (within constructivism) depend upon the interaction between the informants and the investigator. The proposed rationale and qualitative design of the research, its methods, and its methodologies are set out in Chapter 4, Research Methodology.

4 Research Methodology

This chapter outlines the research methodology—research approach and design—used for my study. I begin by describing my rationale for carrying out a qualitative study in order to attempt to answer the research questions I posed in Chapter 1. Subsequently, I describe my approach, design, and procedures. I conclude with a description of the participants and an outline of issues and barriers I encountered during the study. As one might anticipate, the study did not go according to plan (i.e., “the best laid plans of ...”). Instead, the study presented a number of unanticipated challenges that certainly invigorated the investigation process.

4.1 Rationale for Qualitative Approach

Distinctions in approaches to research are derived from the way that researchers discern and convey their understanding of reality. Social scientists depict reality through a number of paradigms, frameworks, and macro-level theories (hereafter referred to generally as *paradigms*). Social science paradigms are used by researchers to explain reality according to specific, commonly accepted assumptions that constitute avenues of inquiry.

The research problem of this study was best suited to employing qualitative inquiry because it studied the experiences of individuals involved in developing KM graduate programs—encompassing sensemaking, knowledge creation, and decision-making. The study was not an empirical research study that required an hypothesis or experimental data. My goal was not to prove or disprove an hypothesis. When an inductive method is used, an understanding emerges from the interpretation of a rich description of the situation (the data). My goal was an investigation of a phenomenon from the perspective of the groups involved through the voices of the individuals in the two institutional groups. A qualitative researcher studies a phenomenon as it occurs naturally rather than controlling the conditions under which it is studied. In qualitative research, credibility is established by the application of different techniques to ensure validity and reliability (see Section 4.6). Consequently, a collection and analysis technique such as the case method can be used to triangulate the findings or analytical conclusions drawn from

several sources (Paré, 2002, December). This process of triangulation (Goetz & LeCompte, 1984):

...prevents the investigator from accepting too readily the validity of initial impressions; it enhances the scope, density and clarity of constructs developed during the course of the investigation. It also assists in correcting biases that occur when the ethnographer [researcher] is the only observer of the phenomenon under investigation. (p. 11)

4.2 Research Approach

The case method is appropriate for in-depth examination of a small number of instances of a phenomenon where context is important in order to “retain the holistic and meaningful characteristics of real-life events—such as individual life cycles, [and] organizational and managerial processes” (Yin, 1994, p.3). The case method is especially appropriate in educational research and is also quite useful in generating new theory for subsequent research: “As a research strategy, the distinguishing characteristic of the case study is that it attempts to examine: a) contemporary phenomenon within its real-life context; especially when b) the boundaries between phenomenon and context are not clearly evident” (Yin, 1981, p. 59).

Numerous experts have discussed sociological research methods and developed categories describing the different methods and primary sources of data—see Table 4-1 for a synthesis of these categories (Denzin, 1978; Goetz & LeCompte, 1984; Guba, 1978). A case describes specifics about a situation or object (person, place, event, thing, etc.). Numerous typologies have been proposed for case studies. Stake (1995) described case studies in terms of:

- *intrinsic*—a case selected because it is unusual or exhibits fundamental merit;
- *instrumental*—a case that illustrates a particular issue under study; and
- *collective (multiple instrumental)*—multiple cases that can be contrasted and/or compared in order to provide insight into an issue.

Stake’s categories contrast with Yin’s (1994, pp. 4–9), who outlined three types of case studies that parallel common research strategies:

1. *exploratory*—where the focus of the research is on the **what** questions about the phenomena;
2. *descriptive*—where the focus of the research is on the **who, where, how many,** and **how much** questions about the phenomena; and
3. *explanatory*—where the focus of the research is on the **how** and **why** questions about the phenomena.

Approach	Research Method	Primary Sources of Data
Qualitative	case method	<ul style="list-style-type: none"> • documentation of historical behaviour or observation of current behaviour across a small [1–10] number of instances
	grounded theory	<ul style="list-style-type: none"> • analysis and coding of detailed facts and observations
	document analysis	<ul style="list-style-type: none"> • analysis of written documents
	phenomenology	<ul style="list-style-type: none"> • documentation of a phenomena
	historical analysis	<ul style="list-style-type: none"> • analysis of historical human artifacts
	ethnography	<ul style="list-style-type: none"> • observation of informants and documentation of observations
Quantitative	experimentation	<ul style="list-style-type: none"> • observation of current behaviour
	case method analysis	<ul style="list-style-type: none"> • observation of selective cases across a large [5–1000's or more] number of instances
	survey analysis	<ul style="list-style-type: none"> • documentation of current experiences across a large number of instances
	simulations	<ul style="list-style-type: none"> • modeling of categories and relationships

Table 4-1 Research Approach and Methods vs. Primary Sources of Data

4.3 Research Procedures

4.3.1 Identification of the Potential Study Population

A population was designated for the study according to its significance in and relevance to support my inquiry into the research question. The population included all global universities and colleges. These were either private or public corporate entities, i.e., land grant colleges, military universities, state or provincial universities, and privately funded colleges. A subset of this larger population domain was universities and colleges with graduate schools offering a Master's degree. Within the graduate schools, the designated

population subset for this study was educational programs (or academic streams) where the primary offering was a KM concentration, major, program, stream, etc.

The selection process proceeded in a linear, stepwise fashion. I had already conducted a broad, informal survey of graduate programs to ascertain the breadth of programs that might belong to the emerging discipline of KM (Sutton, 2002a). From a survey of almost 1500 university websites, 79 programs within 49 universities were identified, and all but two at a graduate level (see Appendix B). KM was very broadly interpreted in that study to include any program that would generally fit within the widely accepted taxonomy proposed by Despres and Chauvel (2000a) and extended by me (as illustrated in Figure 4-1). This step required three months to complete the informal survey.

4.3.2 Management of the Responses

Very early in the design of the qualitative study my dissertation advisor and I decided that one case would be sufficient for carrying out my investigation and analysis. Ideally, if we could identify two cases, then I could take advantage of an opportunity to contrast and compare two cases. Richer data and analysis would be possible with more than one case, but too many cases would go beyond the scope, time, and effort available for the study. I randomly choose to contact 30 KM program site authorities. I received 11 responses of varying degrees of interest. Those who replied and expressed interest in participating were requested to supply additional information to aid in evaluating their sincere interest and the potential depth of data available at their site. Six sites responded with additional information and I assessed the mandatory and desirable criteria. This step required about six weeks of effort.

4.3.3 Site Selection

Eight positive responses were received from institutions in North America as well from Australia, South Africa, and the UK. I attempted to identify and establish a number of lines of research funding to support expenses necessary to carry out this study abroad. However, I was not able to locate any funding, other than my personal savings, to support the travel, living, and accommodation expenses I would incur. Due to personal financial constraints, I could only self-finance the expenses for travel in North America or the UK,

and selected from sites that were convenient. Thus, I kindly declined participation from institutions too far a field because of the prohibitive cost.

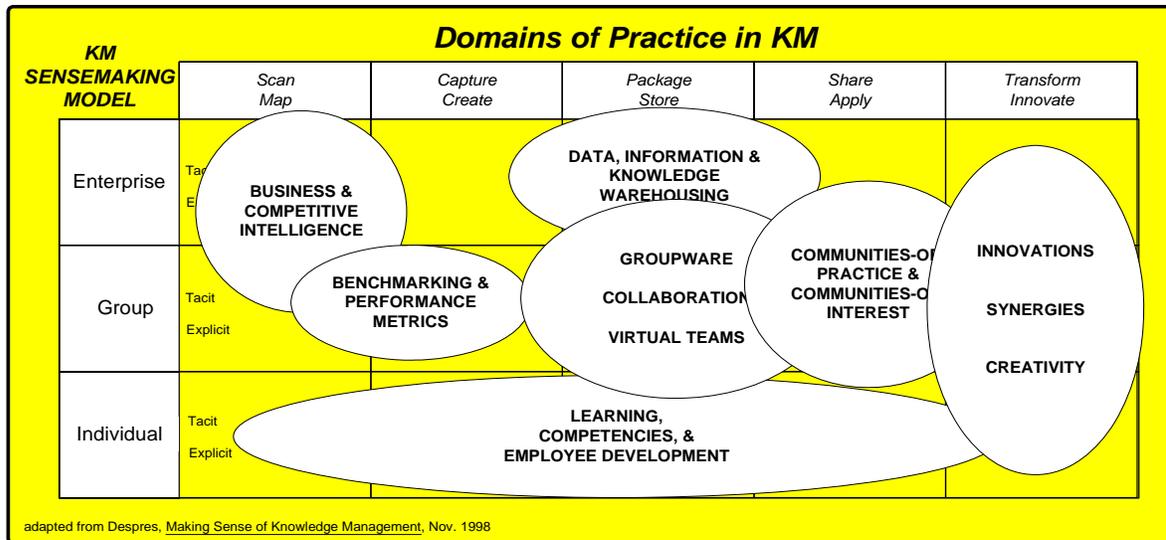


Figure 4-1 Knowledge Management Taxonomy, adapted from Despres & Chauvel 2000a, p. 77

I reviewed candidates within the geographical area of North America and the UK, and initially selected five sites. I again contacted the deans, directors, and department heads of these Knowledge Management programs to ascertain the availability of faculty and staff to participate in the study. A tacit agreement was established with each of the institutional contacts to participate in my study. As I began to consider plans for selecting the final sites, two of the five sites withdrew because of unanticipated events that would make it difficult to schedule interviews with potential informants. Finally, a third site withdrew because one of the primary informants had a personal workload issue that made it difficult to schedule time to be interviewed. Consequently, I was left with two prime candidate sites whose KM programs had been in operation for at least two years. I proceeded to execute the study activities since the two interested and committed sites were satisfactory for my study. Had one of these sites also pulled out, then one site would have remained, which I had already decided was sufficient for the investigation. This step required about two weeks of evaluation, negotiation, and discussion.

4.3.4 Chronology of Procedural Steps at the Selected Sites

The chronology of the planned procedural steps associated with the research study was broken into three major stages: Pre-Field Site Visit, Field Site Visit, and Post-Field Site Visit. Those stages are detailed in Tables 4-2, 4-3, and 4-4.

Steps	Step Description
1.1	Obtain ethics research certificate from the McGill University Research Ethics Board
1.2	Prepare a research summary of the project scope and design
1.3	Contact study population and assess candidate case sites for suitability to the study
1.4	Negotiate an agreement with the selected candidate KM program site authority
1.5	Request from the selected KM program site authority a proposed list of candidate informants
1.6	Introduce the informants to the study via email and telephone calls
1.7	Outline terms and conditions surrounding ethical research issues to the informants, i.e., confidentiality, privacy, and anonymity
1.8	Obtain written, informed consent from all volunteer informants
1.9	Schedule fieldwork visit
1.10	Send a checklist in advance of the visit to the site authority and informants requesting documentation considered intrinsic to the KM program
1.11	Receive documentation from the site authority and informants
1.12	Construct preliminary cases from documentation

Table 4-2 Stage 1: Pre-Field Site Visit

Planning the site visits was a major undertaking for this study. There were some gaps between the plan and its implementation but nothing that brought the project to a halt. A number of unanticipated and additional activities not in the original plan were introduced after the sites were selected. Of particular interest to the audience of this study might be a narrative of what actually took place once I embarked upon the study and are described in the following subsections.

The details associated with the steps described in the previous three tables are outlined in Appendix C. Stage 1 required approximately four weeks to complete for each site. Stage 2 required two weeks duration at each site. Stage 3 required an estimated eighteen months to complete.

Steps	Step Description
2.1	Visit the field site and initiate additional collection of documentation
2.2	Schedule interviews at the field site and become familiar with the surroundings
2.3	Begin interviews by briefing the informants about their participation/withdrawal rights associated with the study
2.4	Execute interviews, taping each session and keeping a journal of any field notes
2.5	Terminate interviews and thank informants for participation

Table 4-3 Stage 2: Field Site Visit

Steps	Step Description
3.1	Transcribe tapes to digital notes
3.2	Import digital notes into software product for grounded theory analysis
3.3	Execute grounded theory analysis
3.4	Code and categorize the transcribed interviews
3.5	Construct detailed cases from documentation and coded interview material
3.6	Analyze and interpret the data
3.7	Draw conclusions and report the findings and research implications
3.8	Follow through with any commitments that were made surrounding the description of benefits associated with participation in the study

Table 4-4 Stage 3: Post-Field Site Visit

4.3.5 Data Collection Procedures

The paradigm for the research design furnished a set of choices and constraints upon data collection. Since the directing paradigm for this study was constructivism, the focus of the unit of analysis for data collection was the group who participated in the conception, design, and development of the KM program—the collectivities of individuals sharing the common attribute of primary association with the KM program. That unit of analysis included individuals associated with the following roles and any related documentation:

- *academic section head*—the individual who retained significant authority, responsibility, and accountability for the program (or academic stream), and, in this study, is referred to as the KM program site authority and thought leader;
- *faculty*—those who taught at least one course, carried out significant research, or supervised students;
- *academic consultants*—those who designed courses for the program;

- *private sector consultants*—those who provided some advice or research for the KM program, many of whom were members of the program’s Advisory Board; and
- *administrative staff*—those who may have made a significant contribution to the development of the program design.

Data associated with the case was collected from correspondence, documents, business documentation, and interviews (Yin, 1994, p.79). Relevant documents were identified, located, examined, analyzed, and interpreted for their meaning. I kept a field notes journal where unusual or distinct tangential statements were recorded. Official material supplied by the informants helped to reveal particular characteristics of the group, its relationships, and its social structure. Omissions in anticipated documentation, such as emails, complete revision history of documents, etc., often could not be rectified.

Data collection took place on two institutional cases. Although this study was not striving to be a collective case study, I intended to select at least two cases (if they became available) that might illustrate some variety and depth in KM educational programs. The convergence of the multiple data sources supported the triangulation of the findings for each case. The collected data was processed according to a schedule and method set out in the next subsection, Data Analysis Procedures. Once the transcripts had been imported within an automated database, I proceeded with coding and categorization of the transcripts.

4.3.6 Data Analysis Procedures

Grounded theory method was used as the analytical method to categorize and interpret the data collected through informant interviews and documents, and packaged as cases. Grounded theory was founded upon research where the generation of theory is intrinsically related to the context of the phenomenon under study. Creswell (1998) proposed that the theory is usually presented in one of three formats: “narrative statements,” “visual picture,” or “a series of hypotheses or propositions” (p. 56).

The grounded theory method was chosen for carrying out the theorizing process during data analysis because of the approach's recognized discipline, longevity, rigour, stability, well-documented history, and widespread acceptance in many academic disciplines, including LIS. The grounded theory method was initially formalized by Glaser and Strauss (1967), refined again by Strauss and Corbin (1990), and developed further by Glaser (1992). With such a method, a cyclical process is comprised of multiple stages of data collection, identification, and refinement of categories, and mapping of interrelationships of categories from data in the repository. The key characteristics of this design are (Creswell, 1994, pp. 447–448):

- studying a process related to a substantive topic;
- sampling, theoretically involving the simultaneous and sequential collection and analysis of data;
- constantly comparing the data with an emerging theory;
- selecting a core category as the central phenomenon for the theory; and
- generating a theory that explains a process about a topic.

An inductive mode of research permits a theory to be built from the bottom up, as illustrated in Figure 4-2 (adapted from Creswell, 1994, p.96). Detailed data is collected and formulated as themes (i.e., categories); eventually a pattern emerges as a theory that can explain or describe a phenomenon in what is called a *constant comparative method* of data analysis. Lather (1986) described how emergent theory evolves:

Building empirically grounded theory requires a reciprocal relationship between data and theory. Data must be allowed to generate propositions in a dialectical manner that permits use of a priori theoretical frameworks [paradigms], but which keeps a particular framework [paradigm] from becoming the container into which the data must be poured. (p. 267)

Computer-Assisted Qualitative Data Analysis Software (CAQDAS)

Grounded theory analysis can be carried out manually or with an automated tool. A manual process is very time intensive (in terms of manually coding and segmenting interview transcripts and tracking cross-references of codes across the cases) and space intensive (in terms of a room or rooms to paste up material for comparison and review).

After discussing the pros and cons of a manual method with my dissertation advisor and two other researchers who had used the manual method, I decided between 2002 and

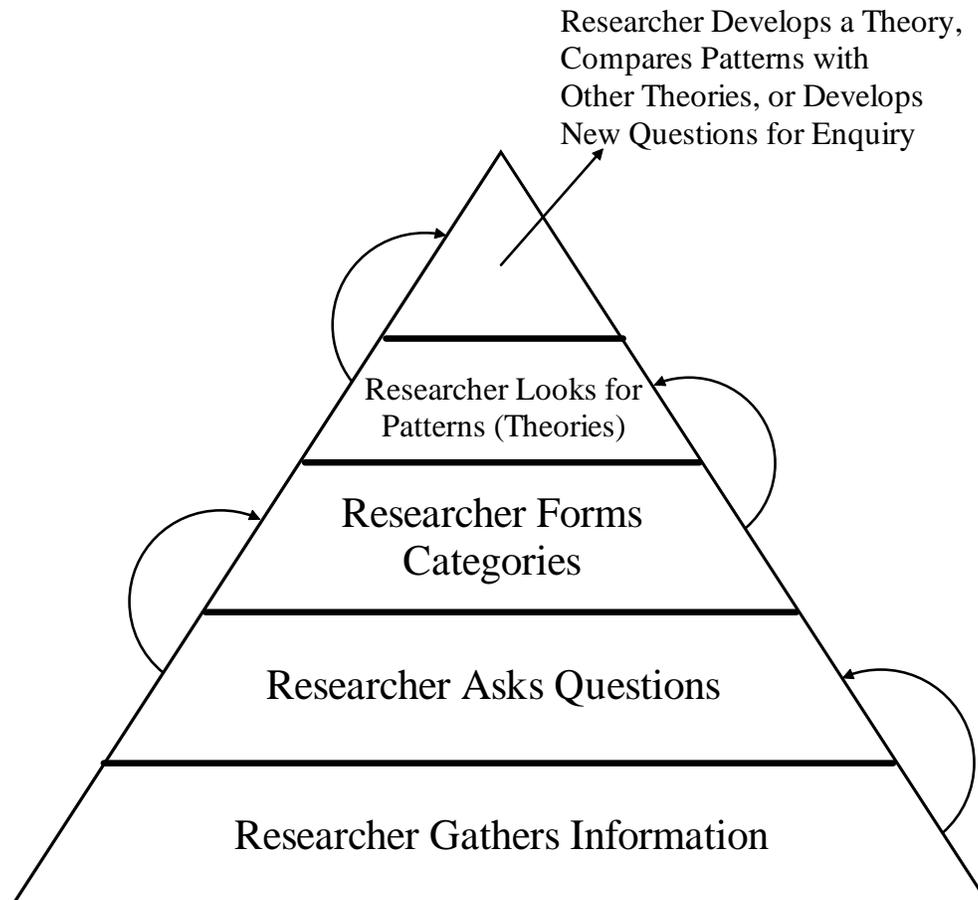


Figure 4-2 Inductive Mode in Researcher Activities,
adapted from Creswell, 1994, p.96

2003 to review CAQDAS tools. Based upon the advice of others along with my bias toward using software applications (when possible) to save time, I carried out a meta-data analysis of literature that discussed CAQDAS (Barry, 1998; Bazeley, 2002; Coffey, Holbrook, & Atkinson, 1996; Crowley, Harré, & Tagg, 2002; Kelle, 1997; Richards, 2002). I selected QSR NVivo Version 2.0 for data coding (QSR International Pty Ltd., 2006a) from a short list that had also included:

- ATLAS.ti (ATLAS.ti Scientific Software Development GmbH, 2006);
- Ethnograph (Qualis Research Associates, 1998);
- HyperRESEARCH™ (ResearchWare, Inc., 2005); and
- QSR N6 (QSR International Pty Ltd, 2006b).

When I began to look at CAQDAS tools in 2002, fewer functions existed than there are today in 2007. Functionality and user interfaces were less sophisticated in many of the products. Training was expensive and challenging to identify locally. The results of the meta-analysis suggested that QSR NVivo was likely the best product at that time. A recent evaluation of packages in Lewins and Silver (2006) illustrated the broad range and increased functionality that is now available in current versions of existing new packages.

Constant Comparative Method

In the constant comparative method, described in detail in Glaser and Strauss (1967), Glaser (1992), and Strauss and Corbin (1990), three distinct coding formats are used to draw out the categories:

- open coding,
- axial coding, and
- selective coding.

The informants chosen for the interviews represented the best sources for collecting data because they actively participated in the design and development and were the individuals who volunteered to act as subjects for the study. Once the 15 interviews were completed I had verbatim transcriptions in textual format created from the recordings.

Transcription and Basic Editing

The digital recordings of the interviews were transcribed into a text document for each informant on a word-for-word basis. Next, the transcriptions were reviewed and marked up so that the questions and comments of the interviewer could be separated visually from the responses and comments of each informant. Often phrases and sentences ran on for half a page or more. Punctuation was inserted where it was deemed necessary to break up the conversation appropriately and long conversational passages were logically chunked into hypothetical paragraphs and sentences. Unintelligible phrases, pauses, unintentional repetitions and terms like “umm” were edited out to decrease the clumsiness of the dialogue. Care was taken to minimize the insertion of words that might change the meaning or intent of the verbatim transcript.

The transcripts were imported into the NVivo application as text documents. The interviews yielded a significant base from which to carry out the analysis. Therefore, hard copy documents were selected from the databank when they were deemed significant enough to be quoted. At that time the documents were labeled with an ID code for reference in the dissertation and used as supporting material for the Axial/Selective Coding Stages.

Open Coding Stage-Emergent Categories

Open and Axial coding stages took place as an iterative process, not strictly as a linear sequence (Strauss & Corbin, 1998). Nonetheless, the first coding stage in the data analysis was to conceptualize, deconstruct, and segment the information by formulating initial open categories about the phenomenon. The categories—basic phrases and terms used to classify the data—were based upon the data collected in the interviews.

“Categories,” as defined by Strauss and Corbin, (1998), are “events, happenings, objects, and actions/interactions that are found to be conceptually similar in nature or related in meaning ... [and] grouped under more abstract concepts” (p. 102). A “concept” is “a labeled phenomenon...[representing] an event, object, or action/interaction that a researcher identifies as being significant in the data. The purpose behind naming phenomenon is to enable researchers to group similar events, happenings, and objects under a common heading or classification” (p. 103).

A category could consist of subcategories, and was also described in terms of its properties, which furnish additional detail for each category. When feasible, the properties were dimensionalized to represent the extreme points of a continuum and detailed further the characteristics of a category.

In the first step I selected and coded each numbered question and the subsequent response for each respondent. The *Node Explorer* in NVivo was initially used to pre-populate the potential nodes with 22 questions, sub-questions and corresponding ‘bracketed’ answers as nodes—Q&A nodes. The transcript of each respondent was then analyzed and coded

with the corresponding question and response node ID. This made it easier to differentiate where the questions and answers from the structured questionnaire began and ended.

After the completion of the Q&A coding, actual Open Coding commenced. The site leaders, senior faculty members, and professional staff were coded in that order, followed by support staff and Advisory Board members. Site 1 was coded consecutively as C-1 (Case-1), one informant at a time, starting with C-1-1 until C-1-6 was reached. Then the informants at Site 2 were coded consecutively as C-2 (Case-2), from C-2-1 through C-2-9.

The concepts, events, topics, and themes contained in the questions facilitated the abstracting and free association of categories to the text in the transcripts. The conceptual framework embedded in the design of the structured questionnaire served to implicitly guide the identification and assignment of emergent categories in the Open Coding stage. As suggested by Strauss and Corbin (1990), I mentally posed to myself a number of guiding, sensitizing, theoretical, practical, and structural questions as the transcript was analyzed—question–response by question–response.

Open Coding Stage-Categories Resulting from Constant Comparison

The text within each transcript was broken into discrete categories and examined in detail. When the text shared common characteristics of another category name, the constant comparison method was used to categorize a concept or event with a category name of a similar nature. When the text did not share common characteristics of another category name, a new, different category was formulated and tagged to the text. Each fragment of the text containing significant data was continuously compared to existing categories or given the label of a new category.

Initial analysis of the cases resulted in a wide-ranging spectrum of Open Coding categories. Table 4-5 illustrates the initial categories that were derived during this Open Coding stage of data analysis along with a count of the number of fragments indexed to

the category across both sites. An estimated 1082 fragments of text were indexed to the emergent categories. Table 4-6 is a tabulation of counts of the number of words and pages of transcripts generated by the interviews for each informant, site, and the study sample as a whole. The category Questions and Answers from Questionnaire is N/A because this was equivalent to the number of questions each informant fielded from the protocol questionnaire and it was not a derived category. The informants generated an estimated 82,300 words in the interviews, comprising a rounded count of 250 double spaced pages.

Once the Open Coding categories were identified, I proceeded to group categories into clusters where a relationship appeared to exist and a higher order category emerged or could be used to label the cluster. The data became saturated when I could no longer identify significant variations in the concepts. The resulting categories and clusters were concepts that began to stimulate a deeper understanding of the data and the relationships between the categories.

Once the data was saturated I also pruned categories that did not seem connected to other categories or were not intrinsic to answering the research questions. This pruning process also included those categories reflecting proprietary or confidential information. The result was a concept map consisting of the categories and pruned cluster groupings reflected in Figure 4-3. This process also created the foundation for selecting the Core category and, thus, permitted me to commence the Axial Coding stage. Next I dimensionalized the categories, identifying properties and their ranges. This helped me to begin to identify the central category and phenomenon better.

Axial Coding Stage

Category clusters began to emerge in relation to a grounded theory Axial Coding paradigm. Although the goal of open coding was to “fracture” the data, the opposite goal was proposed by Strauss and Corbin for Axial Coding—weaving the data back together to make connections and relationships explicit and understandable. The first step in this stage was to identify the core category (the phenomenon) along with the various accompanying conditions, strategies, and consequences associated with the phenomenon.

#	Categories (1–16)	Fragment Count	#	Categories (17–32)	Fragment Count
1	Activity-Interaction of Team Members	47	17	Lessons Learned/Advice to Others	39
2	Advisory Board Facilitation Activities	41	18	Making Sense of KM	62
3	Advisory Board Member Selection	35	19	Marketing and Branding	38
4	Ambiguity-Uncertainty re: KM	47	20	Obstacles to KM Programs	45
5	Background-Experiences of Participants	29	21	Other Experts-Collaborators	35
6	Biographical Information	1	22	Placement of KM Program in the Department	40
7	Body of Knowledge Development	43	23	Program Framework Development	87
8	Course Design Process	38	24	Program Framework Models and Metaphors	18
9	Curriculum Design Process	59	25	Program Review of KM Program	27
10	Gap Analysis of the Perception of KM	56	26	Pros-Cons of KM Program Development	51
11	Inclusion-Exclusion of KM Program Components	51	27	Questions and Answers from Questionnaire	N/A
12	Initial Activities of a Participant	21	28	Rationale for an Advisory Board	11
13	Institutional Support	18	29	Recruitment of KM Instructor	50
14	Interaction with State/Provincial Education Authority	25	30	Recruitment of KM Program Director	7
15	KM Program Trigger and Competition	53	31	Size of Programs	8
16	Label-Definition of KM	38	32	Use of IT in Program Design	11
	FRAGMENTS TOTAL	564		FRAGMENTS TOTAL	518

Table 4-5 Categories and Counts Derived During Open Coding Stage of Data Analysis

Informant	No. of Words	No. of Pages (double spaced)	Informant	No. of Words	No. of Pages (double spaced)
C-1-1	8944	25	C-2-1	4459	15
C-1-2	7614	26	C-2-2	5529	16
C-1-3	8707	27	C-2-3	3160	10
C-1-4	8339	24	C-2-4	3686	12
C-1-5	6034	20	C-2-5	5940	18
C-1-6	7081	19	C-2-6	4481	14
			C-2-7	2949	9
			C-2-8	5354	16
Total C-1	46719	140	Total C-2	35558	108
			Both Sites	82277	248

Table 4-6 Site and Informant Word and Page Counts

Strauss and Corbin (1998, p. 147) outlined the criteria for choosing a core category:

1. It must be central; that is, all other major categories can be related to it.
2. It must appear frequently in the data. This means that within all or almost all cases, there are indicators pointing to that concept.
3. The explanation that evolves by relating the categories is logical and consistent. There is no forcing of data.
4. The name or phrase used to describe the central category should be sufficiently abstract that it can be used to do research in other substantive areas, leading to the development of a more general theory.
5. As the concept is refined analytically through integration with other concepts, the theory grows in depth and explanatory power.
6. The concept is able to explain variation as well as the main point made by the data; that is, when conditions vary, the explanation still holds, although the way in which a phenomenon is expressed might look somewhat different. One also should be able to explain contradictory or alternative cases, in terms of that central idea.



Figure 4-3 Final Open Coding Category Clusters

This approach was integral for me to be able to identify the core category. Subsequently, I then employed the Axial Coding paradigm proposed by Strauss and Corbin (1998) as a means to understand the phenomenon under investigation. The core category (or phenomenon) was situated within a coding device to show the interrelationship between structure and process. This locates a phenomenon in a context, “building a systematic, logical, and integrated account, which includes specifying the nature of the relationships between significant events and phenomena” (p. 182). Figure 4-4 provides an overview of the Axial Coding template elements and their definitions.

Consequently, I used Axial Coding to explore the relationship of the categories and subcategories to the paradigm pattern proposed by Strauss and Corbin (1998, p. 127–

142). The result was a coding diagram of the categories that could be mapped conceptually to the different elements of the paradigm (see Figure 4-5). The Axial Coding supported my interpretation of the governing processes and factors associated with the core category (the phenomenon) that emerged.

Grounded Theory Analysis—Axial and Selective Coding

The integration of categories to form a theory was carried out by utilizing two specific techniques mentioned by Strauss and Corbin (1998, p.148): “a diagram” and “a storyline.” Although this process was incredibly difficult and time-consuming, the result proved insightful. A number of open coding categories emerged into a pattern and a description of the process taking place around this phenomenon. I was able to extrude the storyline through the categories and the corresponding relationships of the categories to the core category within the paradigm.

Phenomenon refers to the answer to the question “What is going on here in this situation?” When I looked for a central phenomenon I was trying to identify “repeated patterns of happenings, events, or actions/interactions that represent what people do or say, alone or together, in response to the problems and situations in which they find themselves” (Strauss & Corbin, 1990, p. 130). The phenomenon will be discussed in Chapter 5 in terms of:

- ambiguity/uncertainty about the new, emerging field of KM;
- conceptual framework for a KM program;
- definitions of KM;
- lacking an identifiable Body of Knowledge; and
- making sense of KM.

Causal Conditions encompassed the external (macro) factors, events, or happenings and the internal (micro) factors, events, or happenings that lead to the occurrence or development of the *Core Category*. The *Causal Conditions* “lead to the occurrence or development of a phenomenon” (Strauss & Corbin, 1990, p. 100). I endeavoured to discover as many conditions as possible but the choice of conditions is almost infinite.

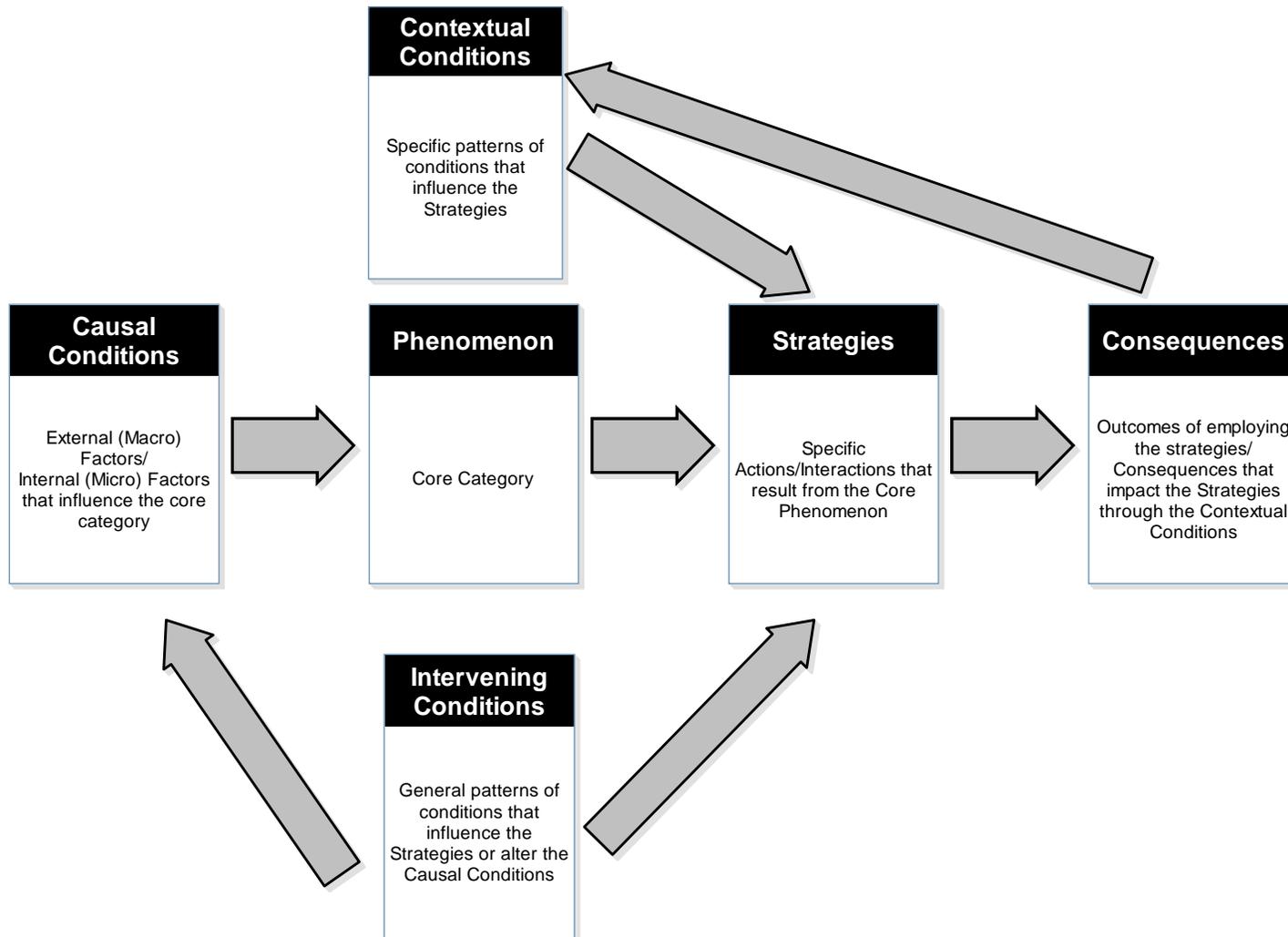


Figure 4-4 Axial Coding Template

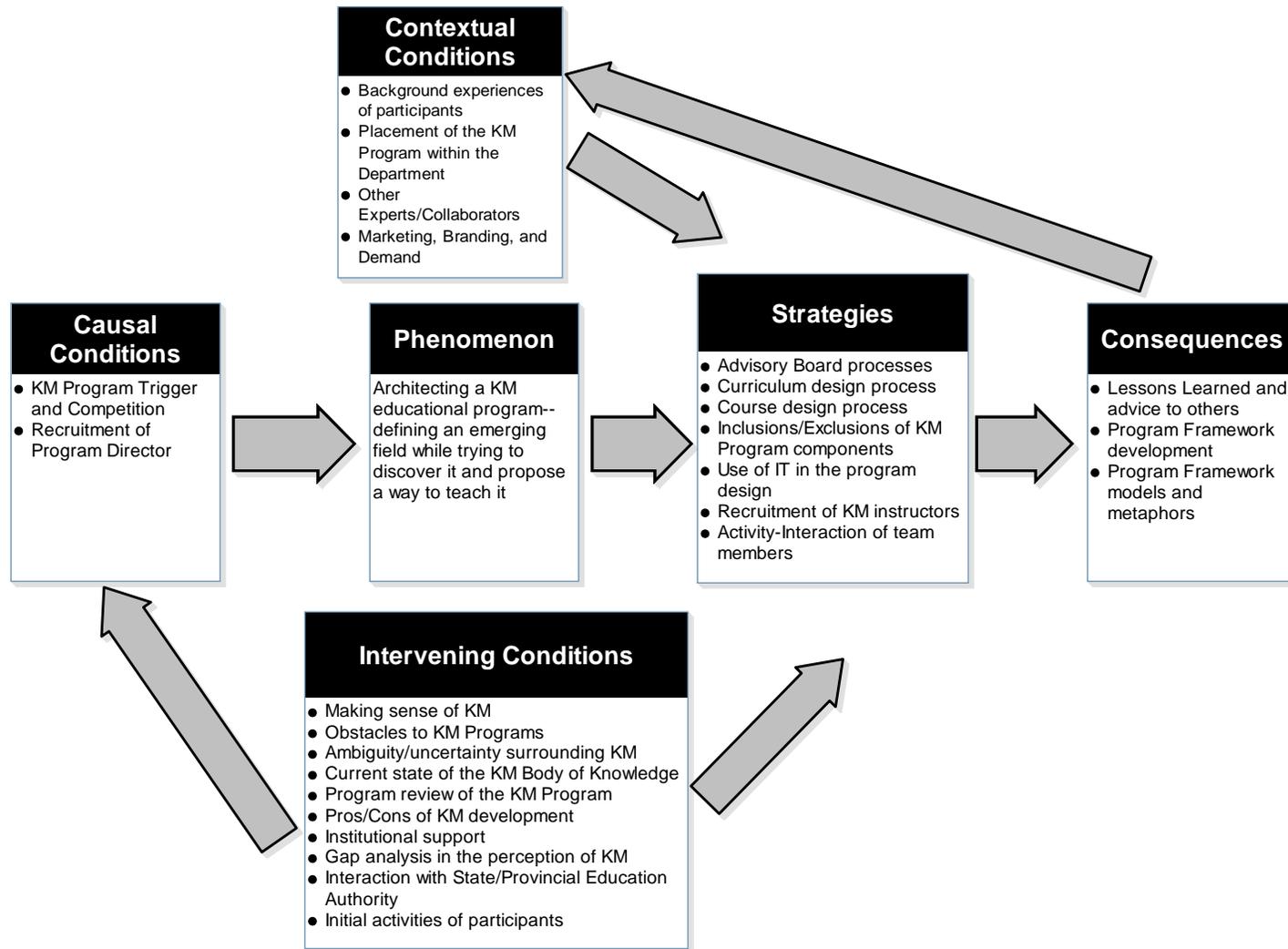


Figure 4-5 Proposed Axial Coding Paradigm for the Phenomenon

Therefore, the *Causal Conditions* I chose were those I felt I could directly link to the *Phenomenon* through a specific relationship.

When actors or agents responded to a problem, issue, or situation, I attempted to describe the conditions that emanated from a direct cause and led to a particular action or interaction. If we use an example of an event labeled a “broken arm,” then the pain experienced by the break in the arm is a consequence of the causal condition of the broken arm. The *Causal Conditions* will be discussed in Chapter 5 in terms of the trigger and competition of the KM program.

Contextual Conditions are the specific narrow patterns of conditions that influence the *Strategies*. *Contextual Conditions* do not produce a direct effect or outcome, but can contribute to the occurrence of an effect. The context refers to “the specific properties of the phenomenon” (Strauss & Corbin, 1990, p. 102), i.e., “the location of events or incidents pertaining to a phenomenon along a dimensional range” (p. 96). If we use the previous example of the broken arm, then the event that actually occurred to break the arm (such as a stick striking the arm violently at a particular angle) is a *Contextual Condition*. The “contextual conditions [are] ‘setting the scene’ for a casual sequence of events...and must precede that sequence or at least be coincident with it” (Dey, 1999, p. 164). *Contextual Conditions* will be described in Chapter 5 in terms of:

- interaction with the external education authority;
- obstacles to KM programs; and
- use of IT in the program design.

Intervening Conditions are the general broad patterns of conditions that influence the *Strategies* or alter the *Causal Conditions*. *Intervening Conditions* are the “broader contextually context” (Strauss & Corbin, 1990, p. 103). They suggest conditions such as: “time, space, culture, economic status, technological status, career, history, and individual biography” (p. 103). Like *Contextual Conditions*, they do not produce a direct effect or outcome, but their configuration can contribute to the occurrence of an effect.

If we again use the example of the event of a broken arm, then the location, timing, and predisposition to weakened bones are *Intervening Conditions*. An *Intervening Condition* occurs between the cause and the consequence, i.e., it neither precedes it temporally, nor does it occur coincidentally with a *Causal Condition*. *Intervening Conditions* will be discussed in Chapter 5 in terms of:

- Advisory Board member selection and
- institutional support.

Strategies, (or *Routines*), are the specific actions or interactions that result from how actors or agents respond to events or happenings encountered in the *Core Category*. Strategic actions or interactions shape the phenomenon in a particular way through intended or deliberate acts undertaken in response to a problem or situation. *Routines* on the other hand, are actions or interactions that are based upon habits, agreed upon conventions, or established protocols. *Routines* may be expressed in terms of rules and regulations, or policies and procedures. *Strategies/Routines* will be discussed in Chapter 5 in terms of:

- curriculum and course design process and
- inclusion–exclusion of KM program components.

Consequences are the outcomes of employing the *Strategies* and may impact the *Strategies* through the *Contextual Conditions*. Any action or interaction can result in a range of consequences, some intentional, some accidental. By explaining the *Consequences* I will try to describe the effect different *Conditions* had upon the *Phenomenon* as well as the *Strategies* that resulted from the relationships between the *Context* and the *Strategies*. *Consequences* will be discussed in Chapter 5 in terms of:

- clarity of vision and goals for a KM program;
- gap analysis of the perception of KM;
- general learning outcomes;
- Knowledge Management program offerings;
- marketing, branding, and demand; and
- strengths and weaknesses in KM program design.

The categories eventually chosen for the rich case descriptions in the next chapter did not include all the categories identified. The categories reported in Chapter 5 were chosen because they were closely aligned with the primary and secondary research questions that launched this study. As outlined in Chapter 1, I framed a broad suite of research questions associated with the phenomenon of an educational KM program that attempted to teach KM while the emerging field of KM continued to evolve. Finally, in Chapters 5 and 6 the results of the selective coding will be used to describe the integration of the categories from the axial coding model in the form of narratives associated with the distinct categories. The conclusions will be based upon the analysis of each case.

Cross-Case Analysis

Although generalizations are not an intrinsic goal of qualitative research, there is value in comparing the results of multiple cases, i.e., conducting a cross-case analysis. Such generalizability may suggest inference in the applicability of the findings outside the individual cases documented. Nonetheless, in staying ‘true’ to the case tradition of inquiry, I furnished ‘thick’ descriptions of the cases so that numerous similarities (and differences) could also be inferred. The responsibility rests with the audience reading this study to determine if enough similarity exists to predicate some level of generalizability, should this be deemed important.

4.4 Research Participants

The two cases furnished a total of N=15 participants: six volunteers from Case-1 (C-1) and nine volunteers from Case-2 (C-2). The volunteers ranged across a spectrum of university positions from senior executives, deans, and faculty members to program support staff and external members of the Advisory Board. In both institutions the Directors were involved with administration and were teaching as faculty. Table 4-7 outlines the different institutional roles held by the participants from each case and overall gender counts, which by chance were almost evenly split. From the perspective of gender, there were six participants who contributed to the research study from C-1: three females and three males. At C-2 nine participants contributed: five females and four males.

Institutional Role of the Participant	Gender Breakdown		Within Cases	
	C-1 Male	C-1 Female	C-2 Male	C-2 Female
<i>Provost/Vice-President Academic</i>	1		1	
<i>Curriculum Program Development Executive</i>	1			
<i>Deans</i>	1			2
<i>Directors</i>		1	2	
<i>Librarian</i>		1		
<i>Faculty Member</i>			1	
<i>Program Support Staff</i>		1		1
<i>Advisory Board Members</i>				2
Total Participants	3	3	4	5

Table 4-7 Institutional Roles of Participants

Each institution furnished a range of potential participants who possessed intimate program knowledge spanning all lifecycle stages of a program: inception, design, development, and delivery. Both institutions also exhibited zero staff turnover from the inception of the program to my site visit, suggesting the possible minimization of potential corporate memory loss from contributors who participated in the original events but may not have been at the institution any longer.

Table 4-8 presents a characterization of the experience of the participants in terms of their knowledge and experience of KM when the programs were conceived. The judgment as to where the participant fitted on the spectrum was derived from information volunteered in the interviews and informal conversations with the participants outside of the interview environment. In my opinion no more than 3 of the 15 informants really knew a lot about the field of KM. Based upon my knowledge of the informants and their self-ratings, I could not classify anyone as an Apprentice.

At C-1 all the participants admitted that they were Beginners, with virtually no experience or knowledge of KM before the new KM program was envisioned. On the other hand at C-2, there were only two Beginners with no previous knowledge of KM, a little less than half of the participants were Novices, and about one third of the group were Competent or Expert in KM. At C-2 the Competent or Expert participants were

practitioners who had returned to the academy with significant real-world experience on KM projects in private and public sector environments.

Role vs. Relative Experience	==	==	==	==	==
C-1 Participant Attribute	B	N	A	C	E
<i>Provost/Vice-President Academic</i>	X				
<i>Program Development Executive</i>	X				
<i>Dean</i>	X				
<i>Director</i>	X				
<i>Librarian</i>	X				
<i>Program Support Staff</i>	X				
C-2 Participant Attribute	B	N	A	C	E
<i>Provost/Vice-President Academic</i>	X				
<i>Dean # 1</i>		X			
<i>Dean # 2</i>		X			
<i>Director # 1</i>					X
<i>Director # 2</i>		X			
<i>Faculty</i>				X	
<i>Program Support Staff</i>	X				
<i>Advisory Board Member # 1</i>				X	
<i>Advisory Board Member # 2</i>		X			

Table 4-8 Relative Experience with KM⁴

4.5 Ethics Certification

I obtained an ethics certificate from the McGill University Research Ethics Board to carry out this study. My application complied with the McGill University Research Ethics Board policy, *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans and Policy on Student Involvement in Research* (Medical Research Council, Natural Sciences and Engineering Research Council, & Social Sciences and Humanities Research Council, 1999). An appropriate and strong standard for delineating and resolving ethical concerns was established. Four major ethical areas framed the research study and are referenced below:

- free and informed consent;
- privacy, anonymity, and confidentiality;

⁴ B - Beginner; N - Novice; A - Apprentice; C - Competent; E – Expert. Categories based upon a breakdown of KM competency proposed in Wiig (1993).

- interviewing and reporting practices; and
- risk abatement.

A copy of the approved ethics certificate is contained in Appendix D. After approval I prepared and sent 30 emails to departmental section heads, (deans, directors, and department heads) of KM graduate programs all over the world with the following information:

- evaluation criteria tables to assist in the assessment of responses (see Appendix D);
- research summary that outlined the scope of the study and the research study design (see Appendix D);
- a preliminary documentation checklist (see Appendix D); and
- expression of interest letter soliciting interest in participating in the study (see Appendix E).

This step required a month to complete at McGill. Both institutions insisted upon the submission of an additional Ethics Certificate application to their own Institutional Review Boards, regardless of the availability of the McGill University Ethics Certificate. Neither institution had ever considered itself a possible research site. Therefore, there was some initial uneasiness at using their staff and faculty as informants in this study without an internal approval of the ethics certificate. This unanticipated requirement added two to three months to the preparation time. Before the interviews at each site could begin, the separate certificates needed approval. Once approved, the *Pre-Interview Protocol* and *Semi-Structured Interview Protocol* material were forwarded to the site authorities for distribution to all volunteers in advance of my visit (see Appendix D and F).

Another obstacle was the confidentiality of documents. Many proprietary subjects and documents were shared with me during the site visits. The institutional leaders insisted informally upon strict anonymity and confidentiality about themselves, their organizations, certain topics and items mentioned in the interviews, as well as the contents of specific documents. I decided to accept this constraint because the volume of

data I was able to collect and use proved quite valuable. Although the constraints had an effect, they did not eliminate the possibility of acquiring rich and useful research material.

The site authorities and participants verbally instructed me about the topics and material that could not be disclosed and needed to remain 'PROPRIETARY.' Anonymity and confidentiality were satisfied by describing certain document content and topics with a generic description that still informed the study without giving away too much information that could be used to infer the institutions and departments. Both sites exhibited a sensitivity one would expect from organizations that saw competitive advantage in the intellectual capital and assets associated with their programs.

A critical success factor for carrying out this initiative was the ability to warrant to the institutions that the reporting of the research would impose the highest level of confidentiality and anonymity possible for the intended purpose of this study. For example, during transcription an anonymity table of replacement tokens was developed and matched against the transcripts to edit out: abbreviations; acronyms; city names; company names; country names, degree titles; names of faculty, institutions, organizations, and staff; personnel and program titles, provinces and states; and university names.

The raw words and phrases were replaced with information identification codes, generic phrases, and placeholder terms. A quotation could contain markup in italics between square brackets if a phrase had been replaced. The clause [*the university in another city*] would be used to replace the actual name captured and transcribed from the interview. This method ensured confidentiality and anonymity throughout the transcripts and made it easier to directly quote the material with a simple 'cut and paste.'

4.6 Credibility of the Findings in Terms of Validity and Reliability

4.6.1 Historical Imperative for Validity and Reliability

Whenever a researcher adopts qualitative techniques, the *validity* of the data, findings, and conclusions needs to be addressed (Maxwell, 2005). There is a long history of the

many differing opinions and ontologies on *validity* and *reliability* in social science (Healy & Perry, 2000; Ritchie & Lewis, 2003). Over a century ago Positivists, such as Comte and Durkheim, wrestled with Idealists, like Dilthey and Weber, over the emerging counter movement to the investigation of the social world by means of a scientific approach. The physical sciences dealt with inanimate objects that most researchers agreed were external to the mind. The social sciences were trying to deal with humans and human behaviour, where the duality of subject and object were difficult to maintain. The human experience appeared to be bound by its cultural context. Doubt emerged that a neutral ontology could be used to describe events, processes, and situations associated with the worlds of human and social behaviour (Aguinaldo, 2004; Smith, 1983). Thus, a struggle was born that continues to this day (Angen, 2000; Cope, 2004; Kennedy, 1984).

The social sciences have wrestled with the maintenance of a vocabulary encompassing the concept of *validity* that paralleled the Positivist approach to research (Steiner, 2002; Winter, 2000). Extremists have appeared, such as Smith (1984), who actually contended that traditional quantitative criteria of *validity* and *reliability* were not relevant to qualitative research. However, that debate is beyond the scope of my investigation. I adopted a framework to describe *validity* and *reliability* that has been studied and endorsed by widely-recognized social scientists and qualitative researchers. Figure 4-6 illustrates credibility of the findings expressed in terms of the different types of *validity* and *reliability*.

4.6.2 Elements of Validity

Goetz and LeCompte (1984) and Maxwell (1992) initially identified major types of *validity* that were subsequently extended by Johnson (1997) to encompass:

- *descriptive validity*—the accurate reporting of the artifacts, behaviours, events, institutional setting, processes, etc., (e.g., Did what was reported actually take place?);
- *interpretive validity*—the accurate reporting and interpretation of the experiences, feelings, perspectives, and thoughts of the study informants, (e.g., Did the researcher accurately portray the meaning in the minds of the participants—their phenomenological perspectives?);

- *theoretical validity*—a credible and defensible theoretical explanation of the data, (e.g., Do my explanations reflect the opinions of the majority of the people in my study? Can I defend the causal basis for any observed relationship or process?):
 - *internal validity*—the capability of an independent researcher to authenticate observed causal relationships and measurements; and
 - *external validity*— the capability of an independent researcher to generalize observed causal relationships, measurements, and outcomes across multiple cases.

Merriam (1995) summed up the basic differences in the operationalization of the concept of *validity* between quantitative and qualitative paradigms:

Qualitative research assumes that reality is constructed, multidimensional and ever-changing; there is no such thing as a single, immutable reality waiting to be observed and measured. Thus, there are interpretations of reality; in a sense the researcher offers his or her interpretation of someone else's interpretation of reality. (p. 53)

Finally, Guba and Lincoln (1998) suggested the need to defend a qualitative study in terms of credibility (*internal validity*), transferability (*external validity*), dependability (*reliability*), and confirmability (*objectivity*). Therefore, the following subsections describe how I executed a *valid* and *reliable* qualitative study.

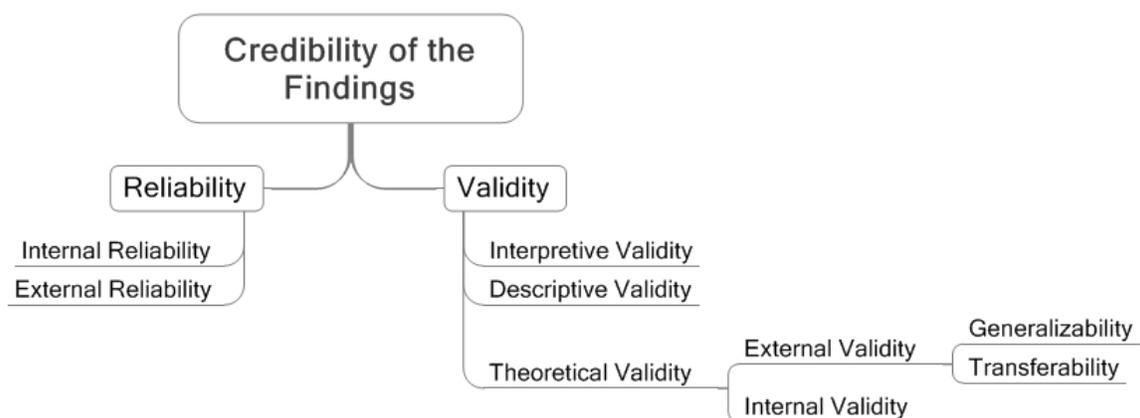


Figure 4-6 Credibility of the Findings Expressed in Terms of the Different Types of *Validity* and *Reliability*

Descriptive Validity

An interpretation of the KM educational program phenomenon was constructed within a social constructivist paradigm using a qualitative approach. The reporting of my data was *descriptively valid* because I used the words within the documents and transcribed interviews from the informants to richly portray the conception, design, and development of the KM programs (Kennedy, 1984). Through the interview transcripts the informants furnished multiple perspectives of the same events taking place within each institution. The data spoke for the informants and I interpreted meaning from their narrative. This also established internal triangulation within the informant sample of the study.

Interpretive Validity

I *validly interpreted* the data provided by the informants by reporting the data through two proven analytical methods: case and grounded theory. I minimized my personal bias through the rigorous application of the constant comparison method used extensively throughout the grounded theory analysis. I also described my background and experiences in KM in order to better situate how I might interpret the data and, thus, how someone else might interpret possible bias (Morgan & Drury, 2003). At the same time I was able to empathize with the intentions and thoughts of those I was interviewing. I drew upon my own previous experiences in a business setting where I tried to make sense of KM in order to teach the subject to my staff and subordinates. I used low inference descriptors (e.g., direct quotations from the informants) that described the feelings and thoughts of the informants. Eventually I inferred meaning from their narratives through the categories I uncovered in the data. I also spent considerable time discussing my findings and conclusions with my dissertation advisor and other mentors so I could identify interpretation problems I may have encountered.

Theoretical Validity

The *theoretical validity* was affirmed by the application of the processes to the data within Choo's Knowing Cycle (CKC)—a widely accepted conceptual framework composed of underlying proven theoretical frameworks. The categories and processes discovered within the phenomenon credibly fit the framework of the CKC. The

embedded theoretical frameworks of sensemaking (Weick), knowledge creation (Nonaka and Takeuchi), and decision-making (March and Simon) provided an opportunity to theoretically triangulate the data. Finally, the informants within each case reflected an overall consensus in their reported experiences of events that were illustrated in the data and findings.

Internal Validity

Within a *theoretically valid* study, two additional issues establish the relationship between *Causal Conditions* and scientific explanations: *internal validity* and *external validity*. I was able to increase the *internal validity* of the study by employing a rigorous design that included more than one analytical or data collection method to triangulate the study, i.e., two analytical methods, (case and grounded theory), two cases, (one from a private institution and one from a public institution); as well as two data sets, (interviews and documents) (Morse, Barrett, Mayan, Olson, & Spiers, 2002; de Wet & Erasmus, 2005). The data from the two cases could be contrasted and compared by an independent researcher in order to *validate* the findings.

In addition, I remained skeptical of some of the cause–effect relationships that emerged from the data. Being an academic involved in establishing my own KM concentration at a university while finishing this study, I had the privilege to use some of my own experiences to confirm the data reported by the informants and the findings I interpreted from the data. As with many causal relationships based upon human behaviour, there were a range of alternative explanations for many of the causal relationships discovered in this study. Additional confirmation in follow-on studies would increase the *internal validity* of documented causal relationships. Thus, the strengths and weaknesses of multiple methods increased the internal, evidential value of the data and findings.

External Validity

External validity presented another challenge, since the goal of a qualitative study is not necessarily to *generalize* the findings. If I were to suggest that this small sample of two cases applies to the population represented by all KM programs, then I would be going beyond the constraints of this qualitative investigation. The sample was small and the two

institutions were not randomly selected (Green, 1999). Although the two KM programs were unique, there were characteristics of the Advisory Boards, conceptual frameworks, competencies and skills descriptions, definitions, experiences, learning outcomes, processes, provisional BOKs, leaders and team members, and syllabi that may eventually be generalized through follow-on studies involving other KM programs in similar institutional settings. The methodology and resulting data from the two reported cases could be used on more cases by an independent researcher in order to *validate* the findings.

The best scenario I could currently anticipate for *external validity* would be the receipt of anecdotal feedback after this study is released from readers and researchers who have been through similar academic experiences in KM programs. This is referred to as *reader or user generalizability* or *transferability*. Stake (1995) suggested that *naturalistic generalization* would be defensible if the circumstances, events, and people were similar to those in the study. By providing detailed descriptions of the institutions and the informants in Chapter 5, I have established the foundation for *naturalistic generalization* (Myers, 2000), especially if a similar study is subsequently executed in another institution where KM programs have been designed and developed. Alternatively, as mentioned earlier in this subsection, I or an independent researcher could embark upon studies of similar potential cases to attempt to generalize the results in terms of *external validity*.

4.6.3 Elements of Reliability

Reliability is an Aristotelian perspective of scientific explanation that presumes the researcher is able to replicate a study. It is distinctively different from *validity*, although the definitions may sound quite similar. In a quantitative study *reliability* is the capability of repeating an experiment over and over again and achieving the exact same results, taking into account acceptable margins of error. The assumption is that truth can be assessed strictly from the repeated measures of a phenomenon (Smith, 1998). *Reliability* as described by Goetz and LeCompte (1984) is expressed in terms of:

- *internal reliability*—the capability of an independent researcher to interpret the study data in exactly the same manner as the original researcher; or

- *external reliability*—the capability of an independent researcher to achieve the same results in a similar situation by using the specified methods.

Both *internal reliability* and *external reliability* can be established through audit trails of the research design (including analytical methods, conceptual frameworks, data collection instruments, category identification and selection, site selection and site visit procedures, descriptions of the cases and informants, etc.) (Morse, Barrett, Mayan, Olson, & Spiers, 2002; Whiteley, 2004). My research design provided a detailed, rigorous “how to manual” for carrying out a qualitative study of institutional KM programs. The research design could be the basis for executing a confirming analysis of each case and grounded theory results derived from the interviews and documentation to establish *internal reliability*. Concomitantly, the research design could be used for executing a similar study at another institution.

Reliability is problematic in the social sciences. *Reliability* needs to be addressed from the perspective of the qualitative paradigm in which the study was conducted. For example, there are often times when a qualitatively designed study cannot be easily replicated in order to validate the original findings: “Since no study of human behaviour, not even controlled experiments, can be replicated exactly, reliability must be assessed indirectly” (Hansen, 1979, p. 52). The goal of my qualitative study was an attempt to explore and explain the phenomenon of KM program conception, design, and development through the perspectives of the institutional participants and not necessarily an attempt to create a repeatable study (Cope, 2004). As recounted in Merriam (1995):

Scriven (1972) makes the point that a lot of people experiencing the same thing does not necessarily mean that their accounts are more reliable than that of a single individual. Five hundred people reporting that they had seen a magician cut a person in half, for example, would not be as reliable a report as that of the lone stagehand who had witnessed the event from behind the curtain. (p. 55)

Guba and Lincoln (1998) asserted that the goal of constructivist inquiry was “understanding and reconstruction of the constructions that people (including the inquirer) initially [held], aiming toward consensus but still open to interpretations as information and sophistication improve” (p. 211). I have situated the research questions,

conceptual framework, research design, data collection, findings, interpretations, and conclusions of my qualitative study within the social constructivist paradigm (Creswell & Miller, 2000). Thus, I have used this paradigmatic framework to affirm the *validity* and *reliability* of my investigation.

4.7 Strengths and Weaknesses of the Research Methodology

4.7.1 Strengths Exhibited by the Research Methodology

Major strengths of the research methodology were previously outlined in Section 4.6 when credibility for the study was described in terms of *reliability* and *validity*. An exploratory and explanatory case study framework seemed ideally suited to the kind of problem investigated (Stebbins, 2001; Yin, 1994). The use of case and grounded theory analysis techniques suited the qualitative nature of the data collected and was useful for analysis and extracting the resulting findings. The use of NVivo for coding was an efficient application of the software to save manual processing and reduce errors. The sites were very supportive and cooperative. Both sites collectively expressed to me that they believed they had achieved something unusual and unique. As a result, once they realized that a researcher might be interested in using their experiences as the basis of a study, they embraced the opportunity.

4.7.2 Weaknesses Exhibited by the Research Methodology

Challenges Caused by Abstraction within the Grounded Theory Method

Moffett (1968) proposed that a potential loss of connection to reality could be associated with higher level abstraction in categorization activities. Paré and Smart (1994) reiterated this potential problem when they framed Moffett's premise within their own work:

“whenever we create categories for analysis ‘we trade a loss of reality for a gain in control’ ” (p. 153). One of the objectives of grounded theory analysis is the capability to tease out concepts and categories from the data. The use of a grounded theory method suggests that the researcher might inadvertently introduce a bias by grouping categories by similarity and lose the opportunity to notice differences. Although possible, I categorized differences as well as similarities in order to overcome this potential weakness. The contrast and comparison of the two cases to each other minimized the possibility of the foci being limited to similarities.

Challenges with Institutional Memory and Personal Recollection

Although the two institutions selected were very interested and committed to being part of this research study, each institutional department under study had never anticipated that they would be the subject of a future research study. Thus, a number of constraints and limitations presented a challenge to the depth of description permitted by the institutions about themselves, the participants, the interview material, and consequent documentation volunteered by the informants.

The available ‘historical’ documentation, personal recollections, correspondence, emails, and notes were imperfect and incomplete representations of the events that transpired. Available hardcopy material supplemented the interview material for describing the evolution and progress of the two KM programs. When the programs were initially conceived, neither site had intended allocating scarce resources and time to keeping an historical archive. The recollections of the participants were neither comprehensive nor complete, since each participant relied upon a personal memory and historical recollection of events that had taken place at least two years earlier. Yet, even with these deficiencies, the data extracted from the interviews provided a strong foundation for discerning insight about the two programs.

The institutional descriptions and participant profiles documented in this study may not disclose a level of depth or specificity that would be ideal, especially by anyone wishing to discover more about the organizational settings and people. Any qualitative study could always benefit from additional data and information. If an artist was asked how much paint or charcoal was necessary to create a piece of artwork before it was begun, his/her reply would often be “just enough to express the concept being painted or drawn.” The same was true with this study. The information disclosed to me in these two cases was sufficient to inform the study and generate useful new knowledge about the phenomenon of KM in the respective university programs.

Software Tool for Coding

I used a version of NVivo that exhibited an unsatisfactory user interface that resulted in a clumsy approach to the coding process. For example, I could not reorder categories; they were preserved in the random order in which they were created during the interview coding processes. Certain functionality in the software was clumsy to apply, such as: making a model; *in vivo*, Paragraph and Section Coding; creating and filtering data sets; showing relations in the Show and Assay tools; and searching. I was hampered by poor documentation and an immature user interface. I decided to engage bare bones functionality that still saved me time over a manually-oriented approach. A software review of NVivo Version 2 that appeared in the *Qualitative Research Journal* confirmed many of the shortcomings I had encountered (Godau, 2004).

If I were to undertake a similar study again I would probably invest in the expense of attending a 3-day training seminar. I would also carry out a more detailed assessment of the current versions of all the qualitative coding tools in the marketplace and try to identify the tools that demonstrated a simpler and easier-to-use interface. I would select a tool where data sets could be more easily linked throughout the database.

During this first step within Open Coding I experimented with Memoing. I found that my previous experience in educational program development and KM had prepared me for the concepts I uncovered. The process of Memoing appeared redundant for me at that stage. I actually used the drafting of Chapter 5 as my approach to Memoing, writing, rewriting, and making textual notes about the different concepts, categories, and their relationships. Therefore, I modified my use of Memoing early in the coding process. I found that I could move quite quickly and naturally from the initial categories to the cluster groups, and finally to the draft chapters.

Logistical Challenges

A logistical challenge arose around the difficult task of coordinating the schedules of candidate participants at both institutions. Once interviews began at C-2 an unanticipated situation arose. Three candidate informants who were peripheral curriculum committee

members withdrew because they were not comfortable with the interviews being digitally recorded. Regardless, the availability of critical senior academics and administrators was deemed sufficient for deriving detailed descriptions of the design and development processes. In fact, the study informants at C-2 still exceeded the number of informants available at C-1. Both pools of study participants were large enough to describe each case individually and to be able to carry out cross-case comparisons.

During the protocol development stage and the subsequent data collection stage, I quickly concluded that some of the structured questions required significant exploration in order to acquire enough data to answer the questions. On the other hand, other questions could be addressed at an acceptable degree of contribution with minimal responses. Prudence and practicality necessitated addressing each of the structured questions at a level that would provide valuable new knowledge about KM and the KM educational programs while capitalizing upon the scarce time available from the informants.

The informants were also very busy with current activities and tried to be as generous as possible in making time available to participate in the study. Some participants also accommodated a second interview if all the relevant questions could not be covered in the first, scheduled 60 minute interview. Time with each of them, however, was limited to 60–90 minutes.

Once I began each interview I discovered that most of the informants had been too busy to read any of the preparatory material I supplied. Even though the informants had replied to my emails, they had not prepared themselves; this extra effort to inform them about the study added at least 15 non-productive minutes to each 60 minute interview.

Theoretical Sensitivity of the Researcher

Glaser (1978) and Strauss and Corbin (1990) required a researcher to reveal his “theoretical sensitivity” for the analytical process of grounded theory to be effective. Theoretical sensitivity refers to the personal qualities, background, and experience that a researcher applies to the research and underlying data. I came to this research situation

with a significant degree of sensitivity that was derived from my previous academic and corporate teaching experience, my KM practitioner experience, as well as my reading of the literature relevant to this study. My experience included a broad knowledge of issues surrounding the emerging field of KM.

During the period of time that I wrote the drafts of the data analysis, discussion, and conclusion chapters, I was engaged at a Midwestern American university in the architecture a KM concentration within an interdisciplinary graduate program. I was living similar experiences to those of the thought leaders in the two cases under study. This was a bit like a *déjà vu*, since I was 'reliving' many of the frustrations and barriers they had experienced and reported.

However, I found that the iterative processes of the constant comparison method in grounded theory counteracted and diminished potential bias I may have brought to the study. The findings stand up to any potential scrutiny. Without the insight provided by my academic and corporate teaching experience as well as my KM practitioner experience, I would not have been able to easily and intimately relate to the problems, challenges, and concerns that the informants expressed in the interviews. In fact, the empathy I could convey to the informants appeared to provide much more candid responses than may have transpired with a less experienced researcher.

I had known about the KM program directors and sites selected as cases for this study in a professional context during the years previous to this study. The KM community is too small for me not to have been familiar with their accomplishments. I met with and corresponded with some of the informants before the study began, and in one case was actually invited to be part of the curriculum design team as my study began. I had to decline such an opportunity because of the time commitment involved. Thus, for this investigation access and theoretical sensitivity were closely connected and mutually contributed to the cooperation and respect that I experienced during data collection.

Chapter 5 follows and describes the two cases in detail through a narrative review clustered under the emergent categories discovered in the grounded theory analysis. Subsequently, Chapter 6 will review these findings in terms of a higher level of analysis and position the data within the context of the research questions.

5 Institutional Data and Analysis

This chapter describes the underlying data for each institutional case involved in this study and the initial analysis of the data. I begin by profiling the two institutions and contrasting and comparing some of their characteristics. This information is followed by the overall stories associated with each institution. The stories provide a narrative that guide the reader through the three major temporal milestones associated with the development of each KM program:

1. Conception of the Program;
2. Initial Program Formulation, Design, and Development; and
3. Final Approval and Launch of the KM Program.

Lastly, detailed category descriptions derived from the coding processes are presented, including poignant quotations from the informants⁵ to support the emergent data discovered during the grounded theory analysis. Chapter 6 will furnish a richer interpretation of the data and additional cross-case comparisons of the findings.

5.1 Descriptions of the Two Institutions

The two institutions represented in the study were distinctively different organizational entities, although very close in size. Both offered undergraduate and graduate degrees, but each university offered a different suite of credentials. Both institutions were also located in the suburbs of metropolitan centres.

5.1.1 Case # 1 – The Institution and Its General Academic Offerings Description of C-1—The Institution

Case # 1 (C-1) represented a relatively new, publicly funded institution. C-1 was founded by an act of a state/provincial government in the mid-1990s. C-1 did not have a School of LIS (Library and Information Science), but developed significant visibility outside of its location because of the visibility of the KM program and School of Business. C-1 was a suburban university located within the city limits of a medium sized metropolitan city.

⁵ Please note that I use the gender pronouns [he/she] or [his/her] or [him/her] in order to uphold anonymity of the informants. I also refer to each informant by his/her internal code based upon each institutional code, e.g., C-1-1, C-1-2, ...C-2-1, C-2-2, etc. The interviewer's words or questions are preceded by [INT].

C-1 was established primarily as a teaching university and catered mostly to mid-career professionals. Courses at C-1 were offered in an almost equal split of traditional face-to-face and distance education modes. Faculty and staff comprised an estimated 350 positions. The student population, estimated between 2,000 and 3,000 students, was predominately made up of graduate students, although undergraduate students could choose from undergraduate completion degrees in commerce or the sciences.

Pragmatic, real-world relevance and experience were the driving foci of all the programs offered. The university delivered a blended learning model, which combined on-line learning and short on-campus residencies throughout the year. The programs emphasized a global perspective coupled with research alliances that brought together public, private, and non-profit sector partners.

My impression of C-1 from the interviews, discussion, and site visit was that this university was interested in and committed to furthering the emerging field of KM. The campus was situated on an old college property that had been shut down in the mid-1990s as part of a cost-cutting drive underway at the time. The faculty and staff of the university were exceptionally welcoming and the mix of new and traditional buildings very inviting and aesthetically pleasing. The 550 acre estate comprising the site contained unique, beautifully preserved buildings, gardens, and forests cover.

I freely toured the old and new teaching, administration, and residency buildings, and was continually struck by the significant investment that had been made in renovations and new building construction. Moreover, there was pervasiveness to the friendliness and openness exhibited by the students, staff, and faculty. I became lost in the extensive gardens and on the expansive grounds a number of times on my long reflective walks after interviews. I always received affable guidance on which unmarked return paths to take in order to locate the building I was seeking.

The students and faculty dressed casually, and their clothing reflected a trendy middle- to upper middle-class underpinning. The student, faculty, and administrative bodies

appeared to be equally split along gender lines, but my interaction with these different bodies suggested that less than a third of the members were culturally diverse from the accepted North American norm. Although I never saw any physically handicapped students, all facilities reflected a sensitivity to the requirements for handicapped services. The academic campus atmosphere was that of a ‘business campus’—focused on its mission, goals, and objectives with very little horsing around one often finds in urban undergraduates campuses. Of course, it was not truly urban, being situated in a park about 20 miles from the downtown urban centre.

Description of C-1—General Academic Offerings

Graduate programs encompassed arts, social sciences, applied sciences, and management graduate degrees, as well as executive learning programs, graduate certificates, and graduate diplomas. C-1 was marketing itself as an innovative university offering applied and professionals programs. Although I ran into a few groups of undergraduate students who were completing their bachelor degree requirements, the number of mid-career professionals on the campus during my visit highlighted the primary focus of the marketing program underway at the university.

C-1 offered programs that were designed to accommodate mature students who were working full-time and wished to acquire a graduate degree. All degree programs were structured to integrate web-based distance education modules with periodic on-campus residential modules. The approach—unique at the time—stimulated a team-oriented cohort to cross-fertilize the extensive experience acquired in the workplace by the students that yielded a significant foundation for intensive study.

C-1 offered two undergraduate programs resulting in Bachelor degrees in business and a specialized science discipline. Of greater interest to a wider target audience were the graduate programs offered by C-1 in specialized areas resulting in Master of Arts (MA), Master of Science (MS or MSc), and Master of Business Administration (MBA) degrees. Advisory Boards had been established to furnish discipline-specific advice to each

department. Advisory Board members were drawn from experts in other educational, public, and private sector organizations.

5.1.2 Case # 2 – The Institution and Its General Academic Offerings

Description of C-2—The Institution

On the other hand, Case # 2 (C-2) represented an almost 100 year-old, privately funded institution. C-2 was initially established in the early 1900's. At C-2 the LIS School started granting graduate degrees in the 1950's. The Business School at C-2 was established in the mid-1970's. The Computer Information Systems (CIS) School, which was quite young, had recently been merged with the Business School. C-2 was also a suburban university with a campus located 10 miles from the downtown core of a very large size metropolitan city.

C-2 was founded originally as a teaching university. Courses at C-2 were primarily offered in the traditional face-to-face education mode, although distance education was beginning to be offered in numerous graduate level courses, especially those accessible from a second campus in a small city in another state/province. Faculty and staff comprised an estimated 450 to 500 positions. The student population was almost two thirds undergraduate students, and estimated to be between 3,000 and 3,500 students.

I was very impressed with the drive and dedication of faculty and staff at C-2. From my interviews, discussions, and site visit I felt this institution was quite interested in trying to build a centre of excellence around the emerging field of KM. The main campus, nearby athletic fields, and a conference centre were situated in a residential suburban area comprising almost 50 acres. The site integrated nicely manicured gardens and pathways throughout the properties and included many traditional small college buildings and a beautiful chapel, along with new residences and a library. A second, smaller satellite campus existed in the small city of an adjacent state/province.

The faculty and staff of the university were quite busy, but welcoming and courteous. Undergraduates wore a uniform-like ensemble, which made the school look a bit formal,

but inviting and well-groomed. Faculty and staff wore suits and more formal clothing than at C-1.

During the days, afternoons, and evenings I encountered graduate students and mid-career professionals on the campus and in the two buildings I frequented where the MBA, Master of Library and Information Science (MLIS), and Master of Knowledge Management (MKM) programs were taught. The new library building sported an excellent coffee bar in the basement, which I used as a location to reflect upon and collect my thoughts between interviews. Often it was not as quiet as I would have wished but this was to be expected from the liveliness of the undergraduates.

I took the time to tour most of the buildings and was invited to a number of wine and cheese evenings that happened to be taking place during the week I visited. One was in the Art School and the other was in the Theatre/Auditorium. Both were well attended by alumni and there seemed to be a very strong tie between the academic community and many graduates currently residing in or near the large metropolitan city.

Although the library, which housed the LIS administration and faculty offices as well as the classrooms, was brand new, the adjacent Business School facilities, consisting of administration and faculty offices and classrooms, had not been renewed in many years—it showed some wear and tear associated with use. Within a short distance of these locations, two new multi-story residences were under construction. A recent campaign to raise money for new construction and campus renewal was showing its success, and the dormitories were slated for completion before the next semester began.

Through my observation of faculty and administrative support staff I encountered during my visit, I would hazard a guess that the gender split was probably two-thirds women and one-third male, with a small number of culturally and ethnically diverse individuals. Many of the department and faculty heads were female.

Based upon the students I ran into in the buildings and grounds, the student body seemed to be split into similar gender proportions, with two-thirds female and one-third male. The students were more culturally and racially diverse than C-1; almost one-third of the student body I encountered were obviously of a minority ethnic or racial origin. Although I never saw any physically handicapped students, all the new facilities reflected sensitivity to handicapped student requirements, although the older buildings had to be retrofitted with elevators because of the number of inter-floor stairways that appeared to be the primary means to move between floors. The academic campus atmosphere was that of a typical liberal arts university.

Description of C-2—General Academic Offerings

Undergraduate students could choose from bachelor degrees in arts, science, and general studies, as well as a broad selection of professional, pre-professional, and accelerated programs. Graduate students could choose offerings from a wide spectrum of majors encompassing business and management, education, LIS, and social work.

C-2 was marketing itself as a liberal arts undergraduate university with a top tier Masters offering in applied and professional programs. In most of the buildings, except the Business School and Library School, I continually ran across mostly undergraduate students who seemed to have a lot of energy and drive. C-2 offered an undergraduate Liberal Arts program as Bachelor degrees in Arts and Science (including the humanities, social sciences, mathematics, and the natural sciences). Additionally, C-2 offered a full range of undergraduate degrees in Business and Education. The undergraduate program was specifically designed to accommodate on-campus students at two locations. C-2 also offered pre-professional programs in: dentistry, law, LIS, medicine, and pharmacology.

At the graduate level C-2 offered applied and professional programs that appealed to a wide target audience who wished to acquire a Master of Arts or Science degree in Education (MA in ED or MS in ED), MBA, Master of Science in Knowledge Management (MS in KM), MLIS, and Master of Social Work (MSW). These graduate programs were designed to accommodate recent undergraduates as well as mature

students who were working full-time and wished to acquire a graduate degree. All graduate degree programs were offered as on-campus traditional learning modules at two campuses.

All the departments that offer applied and professional programs had established Advisory Boards. Members of the Advisory Boards were experienced practitioners from the academy, associations, business, and industry.

5.1.3 Contrasting and Comparing the Basic Information about Both Cases

A summary of the basic characteristics of the two institutions is outlined in Table 5-1 below. Both institutions shared locations in suburban settings and exhibited a similar enrollment size, along with the characteristics of offering undergraduate and graduate degrees and a mix of traditional and distance/online education courses. However, in all other characteristics the institutions were radically different: funding, age of the institution, age of the departments and schools involved, profile of degrees and departments, size of the metropolitan area nearby, and number of campuses.

Attribute	C-1	C-2
<i>Funding</i>	Public	Private
<i>Undergraduate degrees</i>	Yes	Yes
<i>Graduate degrees</i>	Yes	Yes
<i>Date Institution Established</i>	1995	1900
<i>Age of Schools/Departments</i>	< 5 years old	between 25 years old (Business School) and 50 years old (LIS School)
<i>Metro Setting</i>	suburban campus	suburban campus
<i>Proximity</i>	Medium sized metropolitan setting	large sized metropolitan setting
<i>Number of Campuses</i>	1	2
<i>Traditional Courses Taught</i>	Yes	Yes
<i>Distance Courses Taught</i>	Yes	Yes
<i>Student Population</i>	3,000–4,000	4,000–5,000

Table 5-1: Basic Institutional Characteristics

5.2 Narrative Associated with the Institutional Phenomena

The stories of the events taking place at C-1 and C-2 are described in terms of the processes that took place to conceptualize, construct, and prepare to deliver the program. The stories have been arbitrarily broken into three stages based upon the timeline of activities described by the informants, beginning with its inception up to the actual graduation of the first cohorts of the KM program.

5.2.1 Case # 1 – The Publicly–Funded Institution

Stage 1: The Conception of the Program

In early 1999 when C-1 had decided to consider new graduate programs, it was the ‘new kid on the block’ in the state/province of its location. The institution was looking for new opportunities to identify unique program offerings, find innovative opportunities to generate additional revenue streams, and compete within the state/province. The initial identification of KM as a potential program for consideration took place during the heady days of the dot-com boom near the end of the millennium. At that time many organizations were embracing new approaches to implementing information technology and information systems.

The original idea to investigate further the emerging field of KM was triggered in a passing conversation between the Chief Librarian and the Program Development Director. That conversation resulted in an investigation of the literature appearing in the practitioner and academic domains associated with KM. Conferences were becoming prevalent where experts presented interesting frameworks and products to audiences. An increasing number of articles and books were being published in this emerging area. Businesses were starting to speak of new techniques, tools, and models for acquiring, codifying, and sharing knowledge. A Body of Knowledge (BOK) was beginning to evolve. The dialogues about this practitioner area seemed to be taking place mostly within industry and business, and rarely within the academy.

In the late 1990’s there were few universities where courses in KM were offered or taught, and even fewer that actually proposed a KM program offering. The Chief Librarian became aware that this field was growing in interest and generating an

increasing volume and quality of intellectual content. This information was shared with the Program Development Director and the Dean of the division where KM was being considered. The Dean became quite interested in the field from multiple perspectives: entrepreneurial, intellectual, revenue/profit, and innovativeness.

In 1999 an internal survey at the university generated interest in learning more about KM. The Dean identified and attended a very well advertised KM conference—Delphi's International KM Summit (IKMS'99). Consequently, an informal pitch was made to the President of the university by the Dean and the Program Development Director resulting in quick approval by the President to proceed with a proposed Letter of Intent to the State/Provincial Education Authority (S/PEA) containing a sketch for a new MS in KM program. The Dean wished to get the KM program underway as quickly as possible and there was a long lead time to create a proposal and obtain the approval of the S/PEA.

Stage 2: Initial Program Formulation, Design, and Development *State/Provincial Education Authority Experience*

In late 1999 and early 2000 the Dean assembled a small internal team and an external KM Advisory Group to construct a provisional curriculum proposal and prepare it for submission to the S/PEA. Initially the team could not easily make sense of KM. The team encountered significant contradictions and ambiguity represented by different KM definitions, models, and frameworks. In addition, there existed no authoritative BOK that encompassed the subjects comprising KM. However, practicality and pragmatism prevailed.

After a number of iterations, a provisional definition was proposed and agreement reached through consensus by the combined internal and external teams. From that point on the real work of curriculum design began. The KM program drew upon a number of institutional specialties, such as leadership and ecology, as elements of the sustaining KM framework that eventually solidified over the next year.

The operation of the S/PEA was relatively unknown to the senior members of this university, and soon the bureaucracy and politics of the region came into play. The processes within the S/PEA severely limited any personal contact. Being that C-1 was a relatively new university, the political processes embedded in the S/PEA discouraged innovative and unique programs that were based upon a ‘never before heard of’ field. By late 2000 four revisions of the Letter of Intent had passed back and forth between the university and the S/PEA, and approval of a program was no closer than in 1999. The S/PEA did not appear to appreciate or understand the value to learners that a KM program within an emerging field represented. Finally, none of the other established universities had originated this idea first.

Advisory Board Integration with S/PEA Experience

In 2000 when the S/PEA again refused to approve the proposed program, it suggested that the university had not included enough Information Technology (IT) elements in the offering for consideration as a graduate Science degree. The S/PEA was also leery of a program that lacked a conceptual framework, definitions, and an identifiable BOK. These refusals cost C-1 almost a year and a half of rework before higher-quality information could be acquired, constructed, and packaged in order to respond to all the deficiencies identified in the Letter of Intent and subsequent revisions. Nonetheless, this rework resulted in the development of a more rigorous internal curriculum design and review process along with the execution of a KM program assessment conducted by an external consultant by mid-2000. In late 2000 the team was considering the hiring of new KM faculty, but the proposal had not yet been approved by the S/PEA and a decision was made to wait until such approval was granted.

In early 2001, the Dean established a more focused *Terms of Reference* with the internal team and the external KM Advisory Board to:

- dispel the ambiguity and uncertainty associated with this new field,
- define the field as best as possible considering its youth,
- design and develop a conceptual framework that could be used to raise the visibility of the program and direct the curriculum design,

- identify the provisional BOK that would be sufficient for course design, and
- suggest instructors who might be able to teach the first round of courses once the program offering was approved.

The team worked very hard to learn from its first submission and reframe the original proposal. The focus on the KM conceptual framework required the hiring of an external consultant to formalize all the material from the meetings and additional musings of the participants. The goal was to create a conceptual framework that could be the foundation for framing and constructing the curriculum and the courses in greater detail.

Consequently, in mid-2001 another formal proposal was assembled and packaged for the S/PEA. It was based upon the new conceptual framework and the in-depth curriculum development meetings that had identified courses, learning outcomes, topics, and provisional reading lists. The goal of this proposal was to both educate and interest the S/PEA in considering this field to be an emerging applied profession that required an applied graduate level educational program. The degree would be called a Master of Knowledge Management (MKM).

The side benefit that resulted from these development activities was the creation and consideration of a Graduate Diploma (GD) in KM and an MBA concentration in KM. Neither of these approaches required S/PEA approval and both could eventually feed a graduate degree program once it was approved. In early 2002 the MKM proposal was also disapproved. The team was encountering some significant obstacles from the S/PEA to the design and development of a full KM program offering. Regardless, the university began to advertise and offer its GD in KM, and the KM concentration within the MBA. Existing faculty and associates who could master the material for the courses began teaching.

Stage 3: Final Approval and the Launch of the MA in KM Program

In early 2002 the disapproved MKM proposal was replaced by a proposal for a Masters of Arts (MA) in KM and submitted to S/PEA. The new MA in KM was approved in early 2002 and recruitment began for core faculty and a director. By mid-2002 core faculty

were hired and courses continued to be offered, both within the context of the GD and KM concentration of the MBA. The university launched a marketing program to alert potential candidates to the availability of a GD/MBA concentration and stimulate enrollment.

A core curriculum development team was assembled at this time by the Dean. The team consisted of Advisory Board members, practitioners, academics, and experts in KM. This team participated in retreats where further detailed course designs were constructed and developed, along with the identification of future course topics. Eventually, many of the course designers were given the opportunity to teach the courses as adjunct instructors once the program was launched. By late 2002 the first cohort were graduating with a GD in KM.

In early 2003 the institution began to offer the MA in KM. Anyone who had previously enrolled in the GD could ‘cash in’ the credits at anytime in the future and apply them toward the new Master’s degree. By 2004 the first cohort in the MA in KM graduated.

5.2.2 Case # 2 – The Privately–Funded Institution

Stage 1: The Conception of the Program

At about the same time as C-1, in 1999, but unknown to each other, C-2 explored the idea of developing and offering a new KM graduate program. The interest by the institution began quite differently at C-2. For example, the real trigger for the interest stemmed from the hiring of an international expert in KM to teach in its LIS School. This academic practitioner was initially hired for his/her library and information science background. Once established at C-2, he/she began to interest faculty members of the LIS and Business Schools in KM by putting on seminars where different KM topics were discussed.

C-2-1 began to lobby for a KM Centre/Center and KM Certificate, which was established and launched in 1999. This foundational step toward ultimately developing and offering a Master’s degree was instrumental in gradually building a following and a level of commitment that began to span both the LIS and Business Schools. The initial KM

courses were offered as extensions to existing courses by in-house faculty. In addition, a couple new electives were offered by outside practitioners, as a reflection of the constraints placed upon investing in new courses.

Once C-2 began offering courses and a certificate, the institution was willing to explore new opportunities in terms of a shared degree program between the LIS and Business Schools. It appeared to be an innovative opportunity that could capitalize upon the potential source for students from nearby firms and companies trying to do KM in the large metropolitan centre. Of a non-trivial interest was the capability to build new revenue streams, although any program would need to be self-funding. Many organizations in the region were quite interested in new approaches to combining information technology, organizational behaviour, and information systems.

C-2 was not constrained in the same manner as C-1, in that the university was a private institution and did not require the onerous approval process of a state/provincial authority. This permitted a flexible approach to considering the definitions, framework, models, BOK, and courses that might comprise a KM program. The thought leader⁶, C-2-1, quickly offered the capability to articulate different definitions—including his own. This minimized the apparent ambiguity and uncertainty associated with the field. He/she capitalized on a compendium of material that he/she had compiled as a provisional BOK for KM. By mid-2000 the first cohort with a KM Certificate graduated.

Stage 2: Initial Program Formulation, Design, and Development

The Provost became interested and committed when C-2-1 approached the two Deans about developing a shared Master's program. An external KM Advisory Board was established with the enlistment of a number of practitioners that worked with the internal committee considering the mix of courses necessary to offer a Master of Science in Knowledge Management, (MS in KM).

⁶ *Thought leader* is a label I will use throughout the remainder of the dissertation. Many individuals in leadership positions participated as informants from both institutions. In order to differentiate the primary leader at each institution from the other leaders, I labeled that person the "thought leader." The program was conceived and evolved under his/her specific leadership.

The goal was to create a degree that could differentiate itself from the MBA and the MLIS degrees, but at the same time, draw upon the strengths of both programs. Many of the initial Certificate offerings were based upon existing courses and were approved by the Program Development Committee (PDC) and the university Curriculum Review Committee (CRC). A large area of uncertainty remained around the hypothetical target audience for this type of degree. A budget did not exist to carry out a market research study. There was concern by a number of individuals that this would be a difficult program to market since the potential candidates for such a degree were tricky to identify.

Stage 3: More Detailed Program Design, Development and Launching of the KM Program

By late 2001 the interdisciplinary PDC had begun its curriculum and course development. In early 2002 the committee prepared and submitted a proposal to the university CRC which quickly approved it. In numerous committee meetings, brainstorming sessions, and semi-facilitated sessions, the CRC agreed by consensus to offer extensions to many of the existing courses. It also approved repackaging some current course topics so that very little in the way of financial investments would be necessary to get the program off the ground.

A large number of potential topics emerged as candidates for inclusion in the program. However, the shortage of qualified faculty and adjuncts limited the course offerings. A number of successful external practitioners who might have considered teaching a particular KM course were just not impressed with the uninviting fee that was offered for teaching a course. The inability to pay for the time of the practitioners at a competitive level became a disincentive for further elective offerings.

By early 2002 a market plan was developed and advertising began. Faculty from both the LIS and Business Schools were reallocated so that some of their responsibilities included teaching KM program related courses. During 2003 the candidates who enrolled began taking the KM courses over a 12 to 18 month period. The first Master's cohort graduated in early 2004.

5.3 Categories Associated with the Institutional Phenomena

The following subsections will discuss the institutional phenomena. I sequenced the categories chronologically in terms of the grounded theory categories emerging from the Axial Coding process. The descriptions of the *Causal Conditions* build toward the phenomenon. The *Contextual* and *Intervening Conditions* illustrate their effect upon the phenomenon. Consequently, the strategies and consequences flow from the phenomenon. Please keep in mind that the identified categories are not exclusive, and are a permeable means of grouping the data so I could present and discuss it. For example the differences between curriculum and course design and development is subtle. Where does the curriculum end and the courses begin? Thus, I may occasionally repeat for emphasis data found separately within each category. This redundancy is purposeful as a segue between categories. The categories to be covered include:

Stage 1: The Conception of the Program⁷

- KM Program Trigger and Competition
- Making Sense of KM
- Lacking an Identifiable BOK
- Ambiguity-Uncertainty About the New, Emerging Field of KM
- Definitions of KM

⁷ Throughout the remainder of the dissertation I use in-text conventions when quoting from the case interview transcripts and the documents. When leaving out irrelevant material I use ellipses (...). For the interview transcripts I begin the transcript quote with a square bracketed reference ID and end the paragraph(s) with a paragraph ID. For example the following quote is attributed to Case # 1, Informant # 6, and was an extract from paragraph 14:

[C-1-6] (...) it came out of a conversation initially (...) (14).

In order to differentiate my questions as the Interviewer from the responses, I use the reference ID [INT] in front of my questions or comments (identification = Interviewer). Occasionally words and phrases are introduced in a quote as [*italicized square bracketed phrases*] when I need to signify an anonymous token, such as [*Business School*] instead of the exact name of the school. Elsewhere square bracketed words and phrases are introduced as a means to clarify pronouns or references to material contained in previous paragraphs, but not referenced directly in the quote, i.e.,

[C-1-1]: I was sort of critical about KM (...). So I read [Larry Prusak's work] and began to get a sense of the different elements of Knowledge Management (...) (6).

When quoting from a document source I include the *italicized* title in the paragraph where it was discussed, and always end a quote from the document source with an identifier consisting of the Case number, document source number, and the page number of the quote, e.g., (C-1 Document Source # 15, p. 1) would be from Case # 1, Document Source # 15, and page 1.

Stage 2: Initial Program Formulation, Design, and Development

- Conceptual Framework for a KM Program
- Obstacles to KM Programs
- Interaction with the External Education Authority
- Use of IT in KM Program Design
- Institutional Support
- Advisory Board Member Selection

Stage 3: More Detailed Program Design, Development and Launching of the KM Program

- Curriculum and Course Design Processes
- Inclusion–Exclusion of KM Program Components
- Knowledge Management Program Offerings
- General Learning Outcomes
- Clarity of Vision and Goals for the KM Program
- Marketing, Branding, and Demand
- Strength and Weaknesses in KM Program Design
- Gap Analysis of the Perception of KM

5.3.1 KM Program Trigger and Competition

In both cases the triggers for the KM programs occurred a couple years before the ‘dot-com’ crash of 2000–2001. Those were heady days when anything associated with information technology and the Internet seemed to attract huge sums of investment money that disappeared into thin air. A number of critical factors were identified by the informants at both institutions: intellectual curiosity, competitive opportunity and advantage, and apparent market demand. But the most prevalent appeared to focus upon new and potentially significant revenue streams.

KM Program Triggers at C-1

In 1998 C-1 was continually on the lookout for potential candidate programs that could be developed, packaged, staffed, and marketed to the burgeoning audiences interested in graduate degrees. C-1’s mission, as a new university, was to create a competitive advantage over other state/provincial universities and colleges by expanding its graduate

offerings, and thus ensure its medium- to long-term revenue base and forecasted enrollment figures.

The triggers that stimulated interest in developing the KM program at C-1 were multi-threaded. General trends in the development of new graduate programs appeared to be a direct motivator. The serendipity factor led to the discovery of this emerging field by the Chief Librarian who then brainstormed the ideas with other administrative staff:

[C-1-6]: It came out of a conversation initially, quite interestingly over the library counter with the librarian and myself saying [that] we [had] just [come] from a meeting of librarians; and Knowledge Management is getting to be a pretty interesting thing. (...) if we are going to do this, let's do it quickly because this is obviously a place where we think the field is evolving extremely fast (...) (14)

The sense of the 'competition out there' (represented by the other state/provincial higher educational institutions) tacitly provided confirmation that a potential audience existed in the marketplace that might be interested in purchasing this type of degree. Neither demography, ethnic diversity, gender, multiculturalism, new pedagogies, nor new technologies appeared to have any direct causal link as trigger factors.

KM Program Triggers at C-2

In parallel to C-1, the primary trigger for the KM program development at C-2 was the potential for new revenue streams facilitated by the 'timely' recruitment of an individual by the LIS School. This key individual combined the rare traits of being a well-known KM expert, a widely published KM author, and an eminently qualified academic in the LIS field. The triggers, as participants tell them, were:

[C-2-4]: I think actually it was (C-2-1's) hiring. My understanding is that (C-2-1) was hired because of [his/her] background in Knowledge Management. I honestly don't know if the previous Dean had always intended for there to be a Knowledge Management Program or if it is just something that happened. I think to a certain degree it's the latter because (C-2-1) had definite personal interest in KM. [He/she], of course, was a new, untenured faculty member who wanted to make [his/her] mark somehow and I imagine that it was primarily [his/her] initiative that got the ball rolling on it. (...). (54)

Once the new thought leader was hired and embarked upon his research, he/she offered and taught an introductory course in KM as part of the Library and Information Sciences program which continued to trigger the internal interest in KM:

[C-2-1]: I did not visualize that the University would be willing to start the [*KM Centre/Center*]; but I knew the importance of Knowledge Management as a course in the Library Science curriculum and in the [*Business School*] curriculum. So I pushed that course and wrote the proposal for the course and wrote the (...) syllabus. (...) And once I met the students in the Knowledge Management course and the interaction and the interest, and the interest generated in the other private sector here, all that led to expanding that role. And then I started thinking, saying, “well maybe we could do a lot more in the area of Knowledge Management.” (82)

This individual was so passionate about KM that he/she took upon himself the responsibility for leading the initiative by crafting internal seminars and workshops at the university to raise the visibility and knowledge of KM. Consequently, by the time he/she proposed a KM Centre/Center and a Certificate program within a year of his start date, the decision-makers were quite comfortable with the field of KM. They appeared ready to try out some offerings that demonstrated minimal risk and minimal investment. The thought leader also discerned that a low-risk opportunity existed where significant revenue appeared predictable and the demand was self-evident.

In summary, the triggers at C-1 and C-2 were quite similar. Both institutions were sparked the drive for new revenue sources complimented by a secondary trigger comprising intellectual curiosity and topical interest of a faculty or staff member. Both institutions started this conceptual journey by individuals who were well qualified in the LIS profession. C-1 and C-2 were convinced of the positive economic impact on their respective bottom lines because of an emerging marketplace demand for a new, innovative program. Both institutions were ultimately faced with the challenge of being innovative. They could see the appearance of a promising market for a graduate degree in a field that had not yet stabilized or solidified, but one where business was discerning a value associated with its application. That emerging field was being labeled *Knowledge Management*.

5.3.2 Making Sense of KM

KM Sensemaking at C-1

Once interest in a ‘yet to be defined field called KM’ had been stirred up at both institutions, the participants were immediately challenged by their lack of knowledge and understanding about this new and emerging field. All of the participants at C-1 were quite candid about their inability to describe KM cogently. Yet, one characteristic consistently appeared throughout the interviews—the feeling by each participant that they were privy to watching the gestation and birth of something no one had ever before experienced.

Some of the participants framed distinctively this sentiment:

[C-1-1]: I was sort of critical about KM (...). So I read [Larry Prusak’s work] and began to get a sense of the different elements of Knowledge Management which explained on the one hand why it ought to be a discipline; but on the other hand explained very succinctly why there was a lot of debate about what in fact it should be or should not be. (6)

[C-1-6]: This is a very special degree development, very different then the norm because it is a new field, utterly new field in terms of academia, it is a new field in terms of a body of research knowledge, it’s a new field in terms of the unit corporation within the corporate community. So those factors all make it substantially more challenging. (72)

It may be that Knowledge Management is one of these things that we will ultimately and maybe permanently understand poorly in the classical sense of breaking it down [into] its component pieces and assemble it together. It may not be something that can be assembled that way. (136)

KM was difficult to describe as a whole. Concomitantly, KM was very difficult to define and decompose into its constituent elements. There was significant debate at C-1 regarding whether KM was associated with the Arts or the Sciences. The ensuing contradictions and ambivalence encompassing this newly minted concept was discussed at length by an informant:

[INT]: Because you just mentioned the difficulty of seeing KM within the context of a science and the difficulty in seeing within the context of an art. So is KM art or science or both?

[C-1-6]: It is both and neither. This is the contradiction of it I think. And I think that’s where its value is. Humans do solve complex problems but ask them how they do it. Sometimes we talk about, well, it just was intuitively right. Doctors and business executives you will find them saying things like this: “Well I just felt

it...I just thought it was right.” What was the process you followed? I didn’t follow a process. Well, there was no science there. You could teach somebody how you did that? “No, or not easily.”

And one of the challenges of KM is...will be teaching this, and I do believe it can be taught, but it is taught in the same way that we brought in ... simpler level case studies into business programs as a way of teaching people how to attack complicated real world problems.

In [this] same way I think KM will be solved, with something like case studies but at a higher level of complexity. Requiring that you may have problems for which you give it to five teams and you get five different answers, all right. (137–138)

(...) it is a field full of contradictions but it is in the contradictions that it exists. I’m getting a little philosophical, but what I am trying to get down to is there is a role for the structured, linear, very defined database information technology management stuff. That’s part of it.

There’s certainly time for the go with your feelings, go with your gut, intuitive, inexplicable side, almost spiritual. There’s a place for the art and the “how does this sit within the broader philosophical context of our culture;” all of those kind of art related issues? There’s a place for that too. They all co-exist under this one umbrella. (...) (144)

From Augustine, about 400 AD Bishop of Hippo, and he wrote a little two liner. What is time? Ask me and I do not know. Don’t ask me and I know. You know what time is, I know what time is; but don’t you dare try and define it, though, because you will fall on deep waters of unknown depth because no one has yet done it. So it’s up to this common place as time. We all understand it. (150)

Since the participants agreed that the field of KM was evolving and a challenge to make sense of, some of them tried to describe KM in terms of concepts, disciplines, and fields they already understood:

- [C-1-1]
 - “organizational learning and culture”
 - “traditional HR side of the business”
 - “systems-oriented IT driven”
 - “social dimensions” (60)
 - “dealing with a set of human conditions, (...) or preferences or values (...) not amenable to solutions that were technology driven”
 - “technology as the solution to just about every bloody problem that you could think about”
 - “from the Management Sciences and the Information Sciences” (70–72)

- [C-1-3]
 - “a bit of OB [Organizational Behaviour] and OD [Organizational Design]”
 - “a bit of IT [Information Technology]”
 - “almost standard business strategy type stuff” (7–8)

- [C-1-3]
 - “sense of humanity” (19)

- [C-1-4]
 - “from the human and social realm” (143)

Of course, opposition to this new field of KM was encountered where it was not necessarily expected. One of the departments that would become a major player at the institution, the Business School, was initially skeptical of KM and expressed its reservations in terms of KM being a fad.

In summary, C-1 worked hard to make sense of this new, emerging field that no one could seem to put a finger on. C-1 could not yet identify a critical mass of experts who agreed upon its definition and relationships with other fields and disciplines. In an attempt to make sense of KM, C-1-1 attended a KM conference and informally explored the interest by attendees in a KM-based graduate degree. Consequently, C-1-1 jump-started the selection of a KM Program Advisory Board by inviting a number of practitioners who had impressed him/her during the conference to help C-1 build its KM expertise and foundational knowledge.

KM Sensemaking at C-2

At C-2 a similar challenge was recollected by the informants. Most of the informants at C-2 were quite blunt about their lack of knowledge about KM. Only C-2-1, C-2-5, and C-2-8 possessed active experience in KM. In order to overcome the lack of experience and knowledge, C-2-1 proposed numerous categories for classifying KM in order to provide an understanding of its elements to the other informants:

[C-2-1]: First I looked at it from various aspects. One is explicit knowledge and tacit knowledge area. One is internal knowledge management and external knowledge management. And one is the online environment and another non-online environment. So I approached it in so many areas and then looked at the

subfields that are taught in the [*Business School*] and [*CIS School*] and [*LIS School*] and I need[ed] to fit those categories into [suitable] (...) academic disciplines. (99–100)

At C-2 numerous conversations and dialogues revolved around the role of the LIS profession in helping to build a framework for KM: knowledge organization, document management, knowledge artifacts, how knowledge was created within organizations, and products of publishing. One of the decision-makers at C-2 described the experience he/she went through to gain insight into the authenticity of KM:

[C-2-2]: I can remember two or three instances in which external events influenced me. One of them was to be [invited as] an external examiner on a dissertation at the [*Canadian university*]. They were considering a Knowledge Management curriculum and the doctoral student; [*his/her*] dissertation was a case study of how they convened their various groups to look at the curriculum in that area. So I think that fact that a respected institution was looking at this as an area of inquiry and study had a confirmatory, confirming influence on me.

A colleague and a dear friend of mine, who is a Director of a large ARL Library, was very interested in KM and [*he/she*] sent several of [*his/her*] staff to attend one of our workshops here (...). So I felt that (...) [it] was not really a business scam; but it's a confirming observation that [it] is a phenomenon that is existing outside of [our University].

There were a couple of articles that were published in ACRL (Association of College & Research Libraries) and one of the Senior Executives of [*an industry association*] who is on our Advisory Board (...), I believe [*he/she*] actually changed the job title of someone who would have been normally known as a Librarian to a Knowledge Manager. (...)

I think in [*his/her*] estimation what that person was responsible for was leveraging intellectual capital of the association of which you can imagine. I mean this is a huge amount, that's what it all is sitting down there at [*the street address of the industry association*]. The library is...materials in the library are replicated hundreds of times but it's the knowledge of the association that is what people are really looking for. (54)

A conference in New York where the theme was KM also played a significant role in making sense of the emerging KM field. C-2-1 was able to attend the conference and acquire a preliminary understanding of the educational requirements anticipated and

required by a number of the practitioners. There was a progressive appreciation for the fact that KM did not equal IT, although IT might be an enabler of KM.

In summary, C-2 relied very heavily upon its resident KM expert practitioner and academic to help steer the interpretation of what comprised KM and how it could be framed in order to make sense of it. The Dean of the LIS School affirmed the authenticity of KM through his/her professional contacts. This infused C-2 with a higher comfort level to proceed with a program and a more practical appreciation of the potential constituent elements of this new field. Of particular interest is the fact that both C-1 and C-2 attended practitioner KM conferences and used information collected from the speakers to dispel the fog at each institution surrounding this emerging field.

5.3.3 Lacking an Identifiable Body of Knowledge

Missing Body of Knowledge at C-1

One of the conventional approaches that is often used to make sense of a field is to review the BOK associated with its study. In a new, emerging field the identification and review of the BOK can be a major challenge since an agreed upon BOK seldom exists. In 1998 when the original concept documents and proposals were under development at C-1, a uniformly accepted and endorsed BOK⁸ for KM did not exist.

With other established scientific disciplines, (such as physics, chemistry, and biology), the Bodies of Knowledge students learn are well known and were often established decades or centuries ago, with incremental changes and additions over the years. The same was true of many of the social sciences and the arts. KM currently does not have a central bibliographic and reference authority. KM curriculum and course designers were challenged to create an authoritative bibliography encompassing books, case studies, conference proceedings, frameworks, journal articles, methodologies, methods, models, and techniques.

⁸ As of the writing of this dissertation, an identifiable BOK for KM is still elusive, although some KM professional associations have proposed provisional BOKs that are not yet widely accepted or endorsed.

In the mid to late 1990's KM conferences were probably one of the richest sources for carrying out research to locate and identify the widely accepted authorities and their practice-based methodologies. Few academic institutions actually designed, constructed, and offered KM programs. Very little consistency in the elements of the programs' design existed when contrasted across the few institutions offering such a program. KM was considered by the team at C-1 as an evolving, emergent field, and demonstrated no identifiable or stable BOK:

[C-1-3]: It is not an evolved body of knowledge; it will be very dependant on the faculty member, extremely sensitive to whoever is teaching it. (...) Now having said that there [are] certain aspects of programs that would be exchangeable. There are certain courses, I believe, within a KM program that would be, you can take it from there to there and yes it would be roughly the same. But I think there are others that would be quite difficult.

(...) I mean if I think you've got a course that looks at the role of Information Technology and Knowledge Management, I think that would be relatively transferable.

(...). Because the definition and [...] a lot of the language is still evolving, (...) it is totally dependant on the lens through which the faculty member would view that. So a different faculty member would teach the same thing entirely differently. (135-139)

The course descriptions in the 3rd proposal submitted to the S/PEA had fleshed out lists of the works for some of the courses. Visionaries and KM expert practitioners in the field were identified by members of the Advisory Board. One of the participants described the mosaic of emerging topics in this way:

[C-1-5]: As we were building the program we were working very much in the realm of the literature on intellectual capital, human capital epistemology, looking at those sorts of more traditional disciplines or areas within traditional business disciplines, looking at competitive intelligence.

Those were tangentially related areas, because the core literature really would not fix on the ground. But I believe that we did have very early what there was to have and we've been keeping up quite well. (74)

Thus, when speaking of a BOK for KM, the works outlined in Table 5-2 published up to the year 2000 were most often mentioned by the participants verbally or were contained in the proposals.

In summary, C-1 was forced by necessity to make it up as it went along. This shortcoming, combined with a lack of a definition for KM, meant that C-1 took advice from its Advisory Board and did its best in identifying important foci in the literature for eventual study and learning within the courses.

Author	Title
American Film Production	<i>Into the Future: On the Preservation of Knowledge in the Electronic Age</i>
Larry Beilawski and Jim Boyle	<i>Electronic Document Management Systems</i>
Warren Bennis and Burt Nanus	<i>Leaders: Strategies for Taking Charge</i>
Annie Brooking	<i>Intellectual Capital</i>
John Sealy Brown and Paul Duguid	<i>The Social Life of Information</i>
James Cortada and John Woods	<i>The Knowledge Management Yearbook 1999-2000</i>
Tom Davenport	<i>Process Innovation: Reengineering Work Through Information Technology</i>
Tom Davenport and Larry Prusak	<i>Working Knowledge</i>
Edward De Bono	<i>Six Thinking Hats</i>
Stephen Denning	<i>What is knowledge management?: A background document to the World Development Report</i>
Joseph Jaworski and Betty Flowers	<i>Synchronicity: The Inner Path of Leadership</i>
Susanne Kelly and Mary Ann Allison	<i>The Complexity Advantage: How the Science of Complexity Can Help Your Business Achieve Peak Performance</i>
James Lamprecht	<i>ISO 9000 and the Service Sector</i>
John McGonagle and Carolyn Vella	<i>The Internet Age of Competitive Intelligence</i>
Betty Ricks, Ann Swafford, Kay Gow	<i>Information and Image Management: A Records Systems Approach</i>
Peter Senge	<i>The Fifth Discipline</i>
David Snowden	<i>"Liberating Knowledge" Introductory chapter to Liberating Knowledge (and subsequently, The Cynefin Model)</i>
Michael Sutton	<i>Document Management for the Enterprise</i>
Karl Sveiby	<i>The New Organizational Wealth</i>
Donald Tapscott	<i>The Digital Economy: Promise and Peril in the Age of Networked Intelligence</i>
Alvin Toffler	<i>Future Shock, The Third Wave, Powershift</i>

Table 5-2 Sample Authors and Titles from the 2nd S/PEA Proposal Submission and Mentioned Verbally

Missing Body of Knowledge at C-2

On the other hand, the thought leader at C-2 relied more on his/her personal experience than upon the Advisory Board members for the BOK, and justifiably so. He/she tried to identify existing published material that would fit the curriculum learning outcomes and expose students to current thinking about KM:

[C-2-1]: I didn't find much in the literature. Because it's a brand new field, the library literature was not very much in the area of Knowledge Management. But [in] related areas there were some articles such as taxonomies, for instance, some mention of Content Management here and there. Those kinds of things I picked up from the library literature and related [it to] what they are coining as Knowledge Management (...). (20)

Some participants expressed the pervasiveness of literature that might encompass KM, but not be labeled as KM. One participant with MIS experience discussed how he/she felt that KM was multidisciplinary and, as a result, it was each instructor who ultimately framed the BOK for KM (e.g., in terms of Decision Support Systems, Management Information Systems (MIS), Management Sciences, Operations Research, Organizational Behaviour, Organizational Communications, or Organizational Design and Development):

[C-2-5]: I'm trying to distinguish KM as a body of knowledge separate from other body of knowledges. It's difficult, in many cases the articles may have explicitly referred to the fact that they were about Knowledge Management (...).

Sometimes it's the management of knowledge or intellectual capital. So I don't know that I made an explicit decision to say OK this is something that's Knowledge Management per se. I felt (...) the flow of my material for that particular piece.

What I really determined in terms of what was going to be included or not included in terms of the [KM] frameworks was, number one, the relevancy to the students, [and number two] (...) evidence that it had worked or showed promise of working. (34)

This faculty member identified some of the specific sources for his/her KM material:

[C-2-5]: I had it lucky [in some of my business courses] in the sense that, number one, the text I used which is Loudens' text, [*Management Information Systems*,

Organization & Technology], actually had a chapter in it that was specific to Knowledge Management.

Unfortunately, it was ‘baby’ Knowledge Management and it was more of an information systems design perspective. [Number two], what I brought in and chose to bring in were some of the Harvard Business School cases as well as the notes from Harvard Business Review on some KM practices that I used to flesh it out.

I recognize that although the knowledge spiral is not covered in Louden [and Louden], students need to understand that. Because in understanding that they can understand which quadrants IS speaks into and which ones IS will never solve so they can understand that it is necessary, but not sufficient. (30)

One surprising revelation that arose in the interviews was that two participants actually felt that KM already possessed an authoritative BOK:

[C-2-7]: You know to tell you the truth I’m not sure that I thought of KM as not having a designated body of knowledge. (...) there are certainly applicable streams of knowledge that were well defined coming out of some of the conceptual as opposed to the how to do it: good streams of the cataloging and knowledge organization work in Library Science. There’s certainly streams that relate to (...) Epistemology.

I’m not sure that I looked on it as not having a body of knowledge. It just is how you slice the body of what we know this way in this subject. You slice it another way to talk in another subject, it’s just a different way of slicing through the totality of what we know. (10–12)

Subsequently, the thought leader at C-2 compiled and published an extensive bibliography of an estimated 800 entries, which included a number of entries from a much smaller bibliography created by IBM. A couple of years later, the bibliography was updated by one of his/her graduate students as part of a Master’s Project, and almost doubled in size. Many of the participants relied upon C-2-1’s extensive knowledge and publications in this area to help them ‘steer the course.’

The Dean of the LIS School also illustrated his/her feelings about the multidisciplinary nature of the emerging field of KM, the challenge of professionalism in the new field, and potential sources for the BOK:

[INT]: So what I'm discerning you're saying is that Knowledge Management is truly interdisciplinary or transdisciplinary, (...) it penetrates across disciplines. Does that suggest then, over time, that KM will bury itself within other disciplines again like System Analysis and Design has done; or do you see it emerging as a separate discipline, (...)?

[C-2-2]: In order to really answer that question I think that there is a set of assumptions or a worldview that you have to wrestle with. And that worldview is the whole question of the profession. Do I think Knowledge Managers are going to have their own accreditation in their own profession? No.

I don't think that Systems Analysts did that either. Librarianship has it because Librarianship is 125 years old. We've been around, we were in place during that professionalism movement and I don't think that exists anywhere nearly as we are in the anti-professional phase in culture right now. People are very skeptical of people who are doctors and lawyers and teachers and all the rest of it. They don't like that kind of thing.

So on the one hand we're moving towards a lot of credentials and so forth. Even hairdressers have credentials; but the very fact that we're doing that kind of levels that whole process. So in terms of being embedded, it's a whole notion of what the boundaries are of an academic discipline, what the boundaries are of a profession, and I think you have to kind of acknowledge what your biases are in that conversation before you can answer the question will it get embedded or not.

It is interesting, I'm sure you read the Higher Education ads and all of the sort of stuff, the popular... I mean you can get a degree in anything. How long those degrees are going to last and whether they constitute a profession or an academic discipline is anybody's guess and I just think it's a sign of the times. (73–76)

In summary, at C-2 the fact that the thought leader was already constructing a provisional BOK while the field was still emerging uniquely positioned C-2 to capitalize on this in-house expertise. Instead of having to cast about and build it all from scratch or through committee consensus, there was a more pragmatic source available for instructors. There was also an overriding sense by influential participants at C-2 that KM encompassed a number of the fields within the Business School, Library School, and MIS School.

Thus, at C-1 the BOK emerged from the interaction and opinions of the Advisory Board members and subsequently portrayed in the curriculum proposals—an inductive approach. At C-2 the BOK was modeled by the institutional thought leader (C-2-1) and used as the basis for supporting the developing curriculum—a deductive approach.

5.3.4 Ambiguity and Uncertainty About the New, Emerging Field of KM

Ambiguity and Uncertainty at C-1

In order to deal with the uncertainty the core team at C-1 created its own conceptual framework. Even though they did not feel that it was complete or comprehensive, there was an overarching feeling that it was a good starting point:

[C-1-2]: People got to the point where they felt like they could move forward and be comfortable with the fact that there were going to be differences and ambiguities and that was simply part of what the field was about and that it was impossible to be able to draw a box around it. (22)

The content of the conceptual framework itself will be discussed in further detail in a later subsection of this chapter.

The KM conference attended by C-1-3 apparently helped to clarify a lot of the initial thinking about KM. Although a sense of ambiguity and uncertainty prevailed, some of the elements of the emerging KM field appeared quite solid. For example a team member found that putting KM within the context of other topics helped to clear up some of the ambiguity for him/her:

[C-1-5]: There had been by that time, a lot of work done already on concepts like intellectual capital and human capital and tacit vs. explicit knowledge. That sort of work was out there and people were quite well acquainted with that. So putting Knowledge Management in that kind of context as a value added activity was probably the most effective way to convince others. (42)

The personal experience of one individual with complexity theory and uncertain environments also helped to minimize the discomfort associated with ambiguity:

[C-1-4]: I think the fact that I've been an amateur naturalist and involved with ecology and that sort of thing helped tremendously because I was already firmly embedded in a realization that you can't control things. And I also have a (...) [*Degree in a particular field of Management*], which is a wonderful field for paradoxes and there is lots of literature there too so I'm not just talking about my personal perceptions.

You know you can go to someone like Margaret Wheatley for example, or there is Sally Helgesen and lots of authors who talk about leadership and ambiguity and leadership and connections. Probably, I was pretty new at complexity back then;

but although it's probably not the book I'd pick now, Suzanne Kelly's work was helpful at the time. I think Prusak's practicalities. His way of emphasizing context, his comfort with having been one of the founders of the term Knowledge Management and publicly stating what an oxymoron it is. (115)

There was a time constraint at C-1 that required the team to stop vacillating and try to make KM 'everything to everybody.' The team overcame the ambiguity by making a decision to take what they had interpreted and 'get on with the work.'

Ambiguity and Uncertainty at C-2

On the other hand, at C-2 the thought leader sponsored a number of seminars, talks, and discussion groups to help build a strong foundation and portray the stability of KM. This played a significant role in alleviating uncertainty and ambiguity experienced by the participants. C-2-1 illustrated informal talks with KM definitions from a number of practitioner environments: engineering, business, library science, and specialized sectors, like health and pharmacology. The thought leader also experienced and promoted KM from a multidisciplinary perspective:

[C-2-1]: The more you talk to them [the experts] the more you read what the experts have written—it would take you in so many different areas and that is difficult. (...)When systems analysis was developed as a field they wanted to make this as a separate department and separate school. Many campuses tried that; but systems analysis is applicable in all fields so there was no way they could create separate departments for systems analysis.

So now we have a systems analysis function as a discipline that has entered into sociology, psychology, every field you could think of, education to sciences and engineering (...). So (...) they say it should be a Knowledge Management function in the (...) education sector, the finance sector, in the engineering sector, etc. etc. So that's the thinking, so it depends on who you are and where you are. (86)

Some participants suggested that the presence and active involvement of the thought leader was the single most effective antidote to ambiguity and contradiction for the team. Participants candidly expressed the challenges of coping with the ambiguity and uncertainty they experienced while trying to understand and comprehend this emerging field of KM. Some participants expressed the opinion that grappling with this kind of uncertainty took courage and strong emotional motivation because they were going down

a much darkened path, where very little light seemed to enhance the understanding needed of KM. The major activity that seemed to dispel the darkness was the process of dialogue and discussion:

[C-2-8]: The one thing I remember very clearly about that time and continued up to now is the amount of uncertainty that there is about what exactly KM is. A lot of these meetings I went to I would be called on to just stand up and talk about what is KM and people would have different opinions about it.

And I don't know if I did a fair job but I would kind of try to explain, based on the four courses that I had taken, and say this is what it is, this is what the profession tries to be and it's a fledgling profession that's been around for 20 years but hasn't really been accepted into mainstream business consulting in the way that it was envisioned by Drucker and other people, leaders in the field, [like] Davenport and Prusak.

And talk about some of just the basic fundamentals of we're moving into a knowledge economy or rather we are in a knowledge economy and the key competitive advantages to be able to harness every single piece of advantage that we can get out of it.

And the only advantage is being able to put those pieces together and then look at the jigsaw and say this is what makes sense. And the people who have the skill set to do that need to also have the visibility to upper management so that their findings get looked at.

That's part of the uncertainty that was out there. It is exactly what is the field and how (...) we are positioning it academically in the university different from what's actually happening out in practice, and there was a big gulf within the two.
(14)

One area that did produce significant uncertainty about what should be taught was the type of jobs that might be available in the marketplace associated with KM:

[C-2-6]: We just didn't know how to prepare people to go into the field and we didn't have the staff or the support to go out and sample the marketplace to say whose going to hire our graduates? What will they do once they are hired? (10)

Certainly Knowledge Management has to have theoretical underpinnings and they need to come from all three areas [business, LIS, and MIS]. But because the world doesn't really write down, "I want a Knowledge Manager" in their job descriptions, you won't see it on the business pages too often.

I think that (C-2-1) has (...) actually produced job postings that have Knowledge Manager in it. But I don't hear too many businesses that say that (...). And we have lots of graduates who work in what would be construed [as] Knowledge Management but they don't... they're hiring Account Managers or Systems people. (32)

Thus, there was the overriding challenge of trying to define the skills and competencies of potential students who would pick this new field for further education. That issue seemed to be one of the more critical challenges since a formal skills and competency matrix had not been developed.

In summary, at C-1 and C-2 the ambiguity, uncertainty, and sometimes apparent contradictions in understanding KM were overcome by:

- dispersing the fog surrounding KM through a concerted internal awareness program using dialogue, discussion, presentations, workshops, courses, conferences, and seminars;
- developing unique and innovative conceptual frameworks through consensus building that was useful as a starting point for further discussion, refinement, and development of a common perspective; and
- framing and anchoring KM in terms of other topics, fields, or disciplines to promote an understanding of KM and its relationship with other areas of knowledge.

5.3.5 Definitions of KM

KM Definitions at C-1

At C-1 refinements took place in the evolution of the definitions associated with KM. These were reflected in a number of their documents and in discussion during the interviews. An early comment by one of the thought leaders aptly described the challenge concerning the perspectives of the members of the KM Advisory Board:

[C-1-2]: The fact that there was not consensus on what Knowledge Management meant to any of these people because they had particular professional or personal interests (...) was fairly apparent. And that continued, I would say, over the first couple of years. The Advisory Board people really felt like they needed to define and put their particular stamp on it based on whatever [their] particular expertise

was, which is a parallel situation that we've seen with other emerging disciplines.
(18)

The progressive definitions outlined below demonstrated a concerted effort on the part of the core team and the Advisory Board to 'nail down' KM. The goal was to describe something specific and pragmatic, not ephemeral. I am including a significant level of detail within this subsection, since discussion still monopolizes time in KM circles today around "What is KM?"

In the 1998 *Letter of Intent* created for internal review as a "thought piece" at the institution, a commonly accepted definition by Malhorta (1998) for Knowledge Management was initially proposed:

Knowledge management caters to the critical issues of organizational adoption, survival, and competence in the face of increasingly discontinuous environmental change. Essentially, it embodies organizational processes that seek synergistic combination of data and information-processing capacity of information technologies, and the creative and innovative capacity of human beings. (C-1 Source Document # 1, p. 1)

In the first submission in 1999 of the *[University] Proposal for a Master of Science in Knowledge Management* to the S/PEA, knowledge management was defined as "multi-disciplinary, combining an understanding of organizational behavior, information technology, human resources strategies, and effective communication with the ability to lead and manage all manner of enterprises" (C-1 Source Document # 15, p. 1).

The University also authenticated their definition with quotes of KM definitions obtained from Federal and state/provincial public sector authorities:

1. The processes of creating, capturing, transferring, and using knowledge to enhance organizational performance. [*Federal public sector organization*].
2. The collective expertise and know-how of employees; the intellectual property or captured ideas contained in patents, copyrights, design rights, etc.; the databases and information systems that enable a company to function; and the development of customer goodwill. It is the power that each individual has and generates.

This collective brainpower includes:

facts—acquired through formal and informal education;
skills—gained through training and practice;
experience—gained through reflection on past success and mistakes;
value judgments—based on individual perceptions; and
social networks—developed through relationships between co-workers,
colleagues, and customers. [*State/provincial public sector organization*].
(C-1 Source Document # 15, p. 2)

In the 2000 [*University*] *Revised Proposal for the Master of Knowledge Management* to the S/PEA, the University defined KM as “an organizational strategy to optimize procurement, development, retention, and use of data, information, knowledge and wisdom, in order to determine and achieve optimal organizational goals” (C-1 Source Document # 3, p. 2).

Subsequently in an internal discussion paper in 2000, [*University's*] *Approach to Knowledge Management*, the team described the combined offering of the Graduate Diploma and MBA with KM Concentration and had refined the definition of KM to:

Knowledge Management (KM) is an organizational strategy to optimize the procurement, development and retention of data, information, knowledge and collective wisdom, in order to progress towards organizational goals.

KM recognizes organizations as open systems, which exchange information and energy with their surroundings, thereby affecting, and being affected by, surrounding social, economic and ecological systems.

KM recognizes that organizations, like natural environments, are composed of nested systems, and that KM initiatives must integrate disciplines and functions in communities of practice, to build strength from diversity. (C-1 Source Document # 12, p. 1)

Because of the nature of the degree being proposed by the institution, an Advisory Board was established to provide general guidance on the curriculum, vet the pedagogical proposals for courses, establish linkages between the academy and business practitioners, and identify the competencies expected of the graduates who would complete the program. The inability to define KM was a critical reason for establishing the Advisory Board at C-1 and using their expertise.

The proposed definitions for KM varied amongst the members of the Advisory Board. The one overriding characteristic about the definitions was the admission that the emerging field was immature and had not yet defined itself very well. In addition, there was often the mention of an integration of numerous elements from multiple perspectives into a cross-disciplinary framework where KM encompassed:

- an emerging set of practices:

[C-1-1]: I think we tend to get hung up a bit with sort of branding and labels and all that kind of thing. I think what's more important is that (...) whatever we use in terms of a convenient label is very quickly and transparently supported by some context within which you are using it and, so therefore, some explanation as to what it means to us. (...) an emerging set of practices which I think from an academic point of view we would certainly like to package, if you like, as a discipline. (101)

- innovation and collaboration:

[C-1-4]: I've been in lots of forums where people are talking about how Knowledge Management goes against the grain of traditional thinking about management of organizational design or whatever, because old systems aren't working for us very well.

Our traditional ways of communicating, our traditional ways of defining how things are done are tripping us up and costing us time and money. We have to be more innovative; we have to be more collaborative. We have to break down the barriers between sections of organizations.

We have to get people thinking about knowledge and something that is important. We have to get people realizing there are skills involved in Knowledge Management, whatever you call it. It's not just something we all know how to do automatically. (145)

- an holistic approach to organizations enabled by technology:

[C-1-5]: There were all kinds of very wide roaming discussion at the Advisory Board level. There were various internal perspectives on how this thing could go. I think in general people were aligned around the idea that we were talking about a holistic organizational view of knowledge that would be enabled by technology. (150)

- integration of MIS, IT, Library Science, and intellectual property:

[C-1-6]: Unfortunately, a number of folks' understanding of Knowledge Management is that it's about IT management. It most certainly is not. Though,

that is in there. (...) Yes IT is in there. Yes hardware is in there. Yes the sort of management information systems are in there. But, there is something more in there than the integration of IT (...). And it's in that integration and bringing together that the true benefits are received and the power of it exists. (...)

I think we felt maybe there was a need for a bit more of the Library Science kind of balance than we had because librarians have, in effect, [been] doing much of Knowledge Management for years and in some ways it is less new to them.

But you can't call it that because others will get upset. So you don't call it that but that is what it amounts to. But the librarians also limit themselves to a particular perspective and again that is why it is not a good enough paradigm. But we had to cut back on that. We wanted to get more copyright in and we wanted to get more intellectual property in. That all lies in there. (78–82)

- o leadership:

[C-1-5]: I think actually because the degree was focused at a middle to upper management level where leadership, however you sliced the work of the day, is really a big issue. (...) first and foremost you have to be an excellent leader, without which you are doomed to failure because it is about people and the technical skills are actually secondary in that sense. (86)

In summary, I was left with the impression at C-1 that defining KM at one level was considered more of an academic exercise than a practical exercise. At another level everyone seemed to express the need to try to define the field in whatever manner it could be accomplished, but with minimal waste of time. If no consensus could be reached, they believed that incorporating the best consensus from disparate definitions they could muster was the only practical approach they could adopt, while trying to get a program offering out the door as quickly as possible:

[C-1-1]: But really, you know really, if someone were to come up to me tomorrow and say “we've come up with a brilliant new idea as to how to label it.” I would say “congratulations” and we'll carry on with what we're doing and “thank you very much.”

I guess what I'm getting to is I'm not that worried about the label as long as we have the means to when we communicate with each other around this that there is some common language underneath that, that we can at least all agree on. I suspect it is all part of the emergent philosophy doctrine, set of practices, discipline, whatever you want to call it. (103)

[C-1-3]: Yes [there was debate around definitions] but we tried to stop that almost immediately because that's a debate that isn't going anywhere. (...) Because we realized, I think, that we'd go around in circles forever on the definition. So I think we just took a very generic definition. I can't even remember what it was now, but it was a two-sentence definition. (...) It was just a very standard definition of KM. And we just decided once we got to that point that we weren't going to debate it any longer. (71–75)

Dialogue and consensus-building became the primary tools used to focus the informants, KM Advisory Board members, interested faculty and staff, and other candidate faculty onto an acceptable definition. The evolution of the definitions in the different proposals described earlier in this subsection was evidence of the team members' success.

KM Definitions at C-2

At C-2 the activity of defining KM was not as difficult a task as first might have been anticipated by the participants. This activity was driven in a gentle 'top-down' manner where the thought leader educated the CRC members based upon his/her KM experiences gained as a practitioner. The thought leader at C-2 took upon himself the responsibility to educate and inform the other participants, influencers, interested students, and decision-makers about the new field of KM:

[C-2-1]: When I sent out my initial correspondence with people who were interested in [KM] from the [*Business School*], [I explained to] (...) them what Knowledge Management is about from the business perspective and also (...) in the Library Science area what Knowledge Management is about for the Librarian.

(...) we had a lot of e-mail exchange; we had a lot of questions so I answered all of those questions. And once I set up the internal Knowledge Management committee, in that we had mostly [*Business School*] faculty and two [*MIS*] faculty, two [*LIS School*] faculty, and one of the Directors of the Technology Infrastructure people here.

So I had to deal with them and I answered a lot of their questions saying, "What is Knowledge Management? Why are we doing it? What good will that bring to the University, etc., etc...?" It was quite a bit of work, quite a bit of groundwork. (12)

The institutional participants were provided with various frameworks for interpreting definitions of KM:

[C-2-1]: I made [the participants] aware of all the definitions available depending on the perspective. I also showed them the definitions done by the Engineering people, done by the Business people, done by the Library Science people and also some special areas like Health Sector people.

There are schools that offer Knowledge Management in the health sciences and one in Pharmaceuticals industry in [*a foreign country*] so I made them aware of all of the different possibilities. It depends on what sector you are working on and where you're coming from.

But I told them that in our context from the Business perspective from the Library Science perspective, or the information [systems] professional perspective, these are the definitions that we can deal with, so I agreed, they agreed with me on those definitions. (13–14)

In fact, the thought leader chose a particular description as an overarching foundational definition and framework for KM—Davenport and Prusak's (1998) *Working Knowledge: How Organizations Manage What They Know*. In this seminal monograph Davenport and Prusak (1998) never actually defined KM or presented an explicit conceptual framework. They defined knowledge and outlined the limitations of defining knowledge. The authors also implied a process-centric view of KM, describing it as a systematic suite of processes in which knowledge was generated, codified, coordinated, and transferred that resulted in enhanced organizational performance.

Since the thought leader at C-2 had already experienced significant changes in the evolving definitions of KM, the learning and understanding of the participants in the program's conception and development could be sped up and began to encompass: artificial intelligence, business and management, computer and information systems, data warehousing, data mining, competitive intelligence and environmental scanning, knowledge organization, LIS, and organizational design. The thought leader finally proposed the following definition for KM:

Knowledge Management is the systematic process of locating, selecting, organizing, and presenting information/knowledge in a manner that contributes to organizational effectiveness. It is an emerging discipline that promotes a systematic study of the intellectual assets of organizations.

Such assets include the explicit information and knowledge in databases and documents; knowledge of markets and competitors; the knowledge embedded in organizational policies, procedures, and culture; and the tacit knowledge of workers—their expertise and work experience.

Its primary objective is to make the collective knowledge, information, and experience of organizations available to individual employees, business partners, suppliers, and customers, to contribute to their effective participation in the enterprise. (C-2 Source Document # 2, p.1)

One of the participants started out quite confused and described the research approach taken to figure out a definition of KM through information discovery, exploration of other opinions, and an inductive method of integrating multiple definitions. Another participant candidly spoke of the wordsmithing involved in crafting the agreed upon definition:

[C-2-6]: I think if you look at the brochures that were created; they represent six to ten people in a room, wordsmithing things. [*The thought leader*] probably had an influential voice in that and may have produced some of the initial documents. But, yes, we did a lot of wordsmithing without ever coming away truly confident that we had nailed it down, (...). (20)

Finally, two participants summed up the challenge:

[C-2-4]: I would have a clear definition of KM for everyone if there is such a thing out there. (...) just a definition of Knowledge Management and how it is being practiced in organizations right now. If there is a Director of Knowledge Management, if that is the correct term in a company, “What’s the job description?” I would be curious to see a job description for KM people out in the field right now.

(...) certainly there could be Librarians who would benefit just from having a degree and continue to be traditional reference librarians or Directors of Libraries, but in order to get a definition of KM though, I think it would help to see the job descriptions of someone who does do it full time. This gives us an idea of what is meant by KM out there. And I think that is a point for the people who don’t understand it, (...). (88–89)

[C-2-7]: (...) think about this not from the perspective of organizing stuff, but of how people use stuff to make new stuff and kind of work back into the discipline of Knowledge Management from the perspective of knowledge and the way...the messy process of kind of making that. I think when you do that it becomes something that is not divorced from Library Science but it’s certainly bigger than

the box in which we had over the last hundred years shoved Library Science, whether appropriately or not. (62)

In summary, at C-2 the process of reaching agreement on a definition for KM was slightly different than at C-1. The predominantly top-down educational learning process initiated by the thought leader at C-2 appeared to be more effective at quickly getting the team off and working on the curriculum. At C-1 the long, drawn out debates facilitated the emergence of definitions from bottom-up consensus building. C-2 benefited significantly from the leadership exhibited in C-2-1's abilities as an academic, practitioner, and published KM author.

5.3.6 Conceptual Frameworks for KM Programs

Conceptual Framework at C-1

After the initial triggers that occurred to stimulate interest in designing and developing a KM program at C-1, a number of participants began the construction of a program framework. These participants carried out an Internet-based environmental scan of other existing KM programs, the priorities of these institutions, and the kinds of students these other institutions were attracting. Some participants also attended KM Conferences where KM consultants and experts could be found so that the emerging fuzzy, skeletal framework could begin to take on solid characteristics.

The organic, evolving nature of the conceptual framework can be grasped through a detailed review of the collection of documents describing the framework. In the 1998 internal *Letter of Intent* the basic framework proposed by the team demonstrated a rudimentary understanding of this new field of KM, where KM was distinctively separate from business/management and information technology:

The learners will (...) gain knowledge in three areas:

- Knowledge Management,
- Business Management and
- Information Technology. (C-1 Source Document # 1, p. 1)

In the first submission in 1999 of the *[University] Proposal for a Master of Science in Knowledge Management* to the S/PEA, the overarching framework was described a bit differently in terms of its elements and core competencies:

Graduates of the Knowledge Management program will be well-versed in three major areas of study:

- Knowledge Management,
- Management Information Systems/Information Technology
- Business Administration.

The two kinds of activities most often associated with knowledge management are:

- Documentation, appropriation, and distribution of knowledge throughout an organization (i.e., codification of knowledge), and
- Facilitation of human exchanges in which knowledge that is not codified (i.e., tacit knowledge) can be shared.

These skills are core competencies (...). (C-1 Source Document # 15, p. 1)

As described in the internal discussion paper of 2000, *[University's] Approach to Knowledge Management*, the team began to convey a sense of the broader multidisciplinary nature of KM as they saw it:

The discipline and practice of knowledge management combines an understanding and integration of organizational behaviour, information technology, human resources strategies, and communication skills with the ability to lead and manage all manner of enterprises.

All courses in the program have a broad, interdisciplinary, applied focus, enabling learners to develop critical thinking and problem-solving skills. Conceptual skills and cognitive theory are combined with the ability to use technology and work with people to create a knowledge-sharing environment that links a wide spectrum of disparate areas. (C-1 Source Document # 12, p. 5)

In the *[University] Revised Proposal for the Master of Knowledge Management* of 2000 to the S/PEA, the University described the framework very generally in order to place it within a context that might be more easily grasped by the members of the S/PEA:

This new program integrates core concepts and strategies for implementing theories of knowledge production and distribution from several established fields, including information management, leadership and business administration (C-1 Source Document # 3, p. 2)

Then, in *Section 3.2 Curriculum* of this document, the team proposed a very original and sophisticated conceptual framework based upon different forms and expressions of wealth—different kinds of capital—to explain how knowledge management must be:

outcomes-based (focusing on goals), contextual (taking into account the multiple considerations of human, social, structural, and ecological factors) and integrative (as these multiple considerations are overlapping). (C-1 Source Document # 3, p. 8)

Due to the requirements for confidentiality as well as the proprietary nature of the content of a number of the documents, the C-1 Site Authority requested that I refrain from publishing a rendition of the actual conceptual framework that finally facilitated the successful approval of the KM program at C-1. However, I was permitted to describe the ‘capitals’ (types of wealth), in a bit more detail, since much of the KM literature that followed after 2000 described and discussed these different kinds of ‘capitals’ in much more detail.

Because of the predominance of business in the KM literature of 1999, there was a preference to capture a sustainable development type of thinking about KM, illustrated, for example, in Davenport and Prusak’s (1997) *Information Ecology*. Overall, there was a high level, all-encompassing Corporate Capital that depended upon the effective use of knowledge management to contribute directly to the achievement of organizational goals. Corporate Capital was constructed of (C-1 Source Document # 12, p. 4):

- Social Capital,
- Human Capital,
- Structural and Asset (Intellectual Property) Capital, and
- Ecological and Environmental Capital.

One of the participants furnished an explanation of this unique conceptual framework by describing the relationship of the constituent elements (the four capitals) of the core concept in the framework:

[C-1-4]: And the gist of it was (...) we’re dealing with complex systems most of the time in Knowledge Management. We’re dealing with the human mind; we’re dealing with a lot of context, a lot of interrelationships, a lot of important connections (...) and we tried to make it look three-dimensional (...).

The things that are overt in the framework are (...) human factors or human capital. (...) The people part of KM, the individual learning part of KM, intersecting with the structural or asset aspect of Knowledge Management,

policies, databases and so forth. Those were nested within a social context (...) a group within an organization [or] stakeholders, suppliers (...) everyone in the organization and so forth.

(...) the most foreign part to some Board members, nested in environmental or natural or ecological capital. So (...) if things are not sustainable financially, socially, environmentally, then you know you are not going to have long term viability.

(...) there were sort of two versions, one of which was inspired by the Department of the Navy framework (...) The other attempt was more business process oriented, but had to do with growth and sustainability and as you would move along the axes. (...) (12)

Within each of these capitals the team framed a suite of general learning outcomes and built a program structure consisting of on-campus residencies, courses (traditional and distance learning), projects, research, and symposiums.

Graduates of the KM program were expected to develop an in-depth understanding and important practical experiences in three major areas of study (C-1 Source Document # 12, p. 5):

- Knowledge Management Strategy,
- Tools, Techniques, and Processes of Knowledge Management, and
- Corporate Culture and Leadership for Knowledge Management.

In spring of 2000, an external educational consultant was hired to help develop the first internal KM proposal and carry out an academic review of its soundness. The design and development team reviewed the first version of the framework in a one-day workshop and there was considerable consensus and agreement on the detailed framework based upon the ‘capitals.’ The framework was distilled to a more Spartan look and feel for review outside of the group:

[C-1-4]: There’s nothing like a framework to get people realizing they are using words in different ways and have dramatically different backgrounds. But there seemed to be strong agreement that this is complex stuff with a lot of links, and context is hugely important and people are central. And (...) without a social context you don’t go anywhere (...). (16)

In summary, at C-1 a framework based upon four types of wealth was finally adopted in 2000 to illustrate the KM program vision, its goals, and provisionary courses. The capitals were entitled: *Leadership*, *Conflict Resolution*, *Entrepreneurship*, and *Sustainability*. The team had progressed from a rudimentary, relatively naive view of KM to a rather sophisticated framework that expressed the major themes that would interpenetrate the curriculum and courses. The core skills and competencies for the KM program had expanded from the base of “codification and sharing of knowledge” to “knowledge management strategy, tools, techniques, and process,” combined with “corporate culture and leadership.”

This organic process had taken over two years and had been slowed significantly by the S/PEA’s lack of insight into this new, evolving field. In fairness though, regardless of the challenging bureaucratic process required to review new programs in that state/province, the university was totally responsible for finding a way to convince the S/PEA that this new field merited a potential place within a graduate educational program. With the development of a concrete conceptual framework and a basic curriculum proposal review by an outside party, C-1 poised itself to embark upon the detailed design and development of the curriculum and courses.

Conceptual Framework at C-2

C-2, on the other hand, created a Knowledge Management Centre/Center (KMC) in order to establish a placeholder for future Knowledge Management courses. They could not have done this without their recruitment of C-2-1, a renowned KM expert, and his/her appointment as the Director of the KMC. His/her goal became the creation a full Master’s Program in KM. However, the University insisted upon seeing a justifiable business case for this new kind of degree. If the demand actually existed, or could be proven, then the university suggested it would be willing to invest in new curriculum and eventually new faculty. Out of necessity the institution had to plan this program incrementally due to its limited budget and faculty resources.

The KMC began by offering two parallel streams:

1. faculty and student seminars and workshops that established the foundation for those students interested in the emerging field of KM and built faculty experience into the delivery of KM-based learning and
2. a Certificate in Knowledge Management consisting of four courses derived from existing courses being taught in the LIS School and the Business School.

The Certificate was viewed internally as a stepping-stone into the joint MS in KM offered by both Schools of the institution when the MS in KM was finally approved. The seminars generated significant interest and enrollment, since it was particularly easy for any interested professionals to finish the certificate within one year of registration.

The KMC worked with internal and external members of the KM Advisory Board during a two year period to create a conceptual framework for a jointly offered degree. The thought leader and team adopted a conceptual framework based upon Davenport and Prusak's approach described in *Working Knowledge*. This approach was expanded and extended by the thought leader who had also published numerous articles in this area to support his/her perspective. The thought leader's conceptual framework relied heavily upon his/her understanding of the themes he/she discovered in his/her research in the new field of KM:

1. Organizational learning,
2. Document management, and
3. Information technology.

From these three themes the thought leader developed a conceptual model⁹ for Knowledge Management that integrated explicit knowledge assets, tacit knowledge assets, and KM technology infrastructure. The model was extended into a conceptual framework for the KM program.

Essentially C-2, because of its choice to hire a KM expert practitioner and academic as its thought leader, quickly benefited from this leadership and extended his/her original

⁹ I have been purposefully vague in describing this model in order to maintain the confidentiality of the author's name.

conceptual framework of organizational learning, document management, and IT to additionally include knowledge assets management and knowledge technology infrastructure. The Curriculum Review Committee felt it was well prepared to begin the curriculum and course design.

C-1 differed from C-2 in that C-1 had to expend a lot of thought and labour into the development of a conceptual framework from scratch. The result, however, was unique and very innovative. At C-2 the thought leader already authored and possessed a basic framework that he/she marketed internally and obtained tacit consensus to begin the curriculum development work. C-1 had to build its conceptual framework in preparation of the proposal for submission to S/PEA for approval. C-2 instead quickly established the KMC with a provisional conceptual framework as a stepping stone for incrementally building its curriculum. C-2-1 tested his/her conceptual ‘proof of concept’ while minimizing financial investment and risk.

5.3.7 Obstacles to KM Programs

KM Program Obstacles at C-1

Once the hurdle of defining KM at C-1 had been overcome, each informant’s individual perspective of KM began to coalesce. However, the participants encountered a contextual hurdle—the culture of the university did not mesh with the principles of KM and its constituent elements:

[C-1-3]: I mean it really is anti collaboration, (...) which is why the concept of KM within universities is going to be quite difficult because we have a whole structure that is ‘anti that.’ It is not there at all.

[INT]: The word ‘sharing’ is not something the “pops right to the top” [of the list].

[C-1-3]: No. (33–35)

I’d have to say universities are worse than just about anybody out there. But we are so far away from that in our thinking in reality. We’re just a million miles away from it. We have IT departments, we have HR departments, we have Finance Departments, we have these silos in all organizations that are not linked in any meaningful way at all. And Knowledge Management would have them linked. I mean if you truly had an organization that had a Knowledge

Management architecture to it they would be linked intrinsically in all kinds of different ways, and I think we are still playing on the edges of that. (229)

Another obstacle was the lack of resources, which impeded the ‘time to market’ of the product in terms of the degree offering. C-1 lacked qualified KM resources and was resourced potentially with the wrong people, according to some of the participants. Some of the informants felt that a considerable weakness had been the inability to attract high-visibility KM experts who could have led the development as allies on the Advisory Board, instead of the participants having to invent everything from scratch. Such a choice might have stimulated additional visibility, interest, and critical know-how, while shortening the timeline.

Finally, the need to obtain approval from the S/PEA became one of the more significant obstacles for launching the program:

[C-1-4]: Probably the one that would come to a lot of people’s minds would be the [S/PEA] approval and their process is so mysterious that I’m not sure anyone could speak to that even with retrospective coherence. It was just a lot of work and it was good in that it generated ongoing dialogue and rewriting and clarification and question and answering. It probably helped us to build a more solid and cohesive perspective on what we were doing. (116)

KM Program Obstacles at C-2

At C-2 the biggest obstacles to the development of the KM program was the shortage of permanent and qualified faculty to develop new material, the lack of financial resources that could be invested in new curriculum and course development, and the need to begin to establish a revenue stream before funds could become available for further re-investment:

[C-2-2]: And then there has also been some negotiation about, “Well, don’t we need to hire another faculty member for (C-2-1).” Well that’s sort of not how you build a faculty in a small institution. (...) I remember in particular, we had [a faculty] applicant who (...) [clearly wanted] to come to (the region), set up a consulting practice and be on the faculty and that’s fine if you’ve got a big University. But we (...) just couldn’t spend those kinds of resources. Now maybe you could make the argument that if we had spent those kinds of resources that our program would have grown faster, but I don’t know. (70)

Negotiations on how to ‘split the pie’ in terms of revenue sharing followed on the heels of resourcing constraints. As a joint program, the Deans of the LIS and Business Schools negotiated the revenue streams, but it was not necessarily easy, since both needed the headcount to justify their re-allocation of resources.

Another challenge was overcoming the political issues in a collegial faculty setting where some faculty members did not support the new program because they saw it as a fad. In addition, opinions were expressed that a degree separate from either the MBA or MLIS was not a good idea and did not warrant the expense. Finally, there was concern about the timing of the offering. Not unlike C-1, which had to contend with the overhead of the S/PEA, there was a desire at C-2 to be able to offer the program by the fall of the following year. Because faculty were already overcommitted, the tight timeline needed to be quickly initiated and stewarded throughout the process of curriculum review. The time was running out.

In summary, numerous conditions impeded progress toward program development at both C-1 and C-2, and included:

- lack of human and financial resources to invest in developing the program,
- convincing the holdouts that a new or separate degree had value, and
- getting the curriculum development process underway fast enough to get appropriate approvals.

Intrinsic to C-1 were the:

- cultural barriers at the University to the concepts proposed by KM, e.g., lack of commitment to sharing and ‘real’ collaboration;
- shortage of high profile KM experts that could have provided additional visibility; and
- the lack of knowledge of the decision criteria used by the S/PEA for new program approval.

Distinctive to C-2 was the challenge of splitting headcount and revenue sharing.

5.3.8 Interaction with the External Educational Authority

External Education Authority Process at C-1

C-2 was mandated by its state/provincial status to obtain approval for any new program from the S/PEA, an organization that was comprised of members from other state/provincial universities and state/provincial educational authorities. The experience was process and procedure driven and required a significant investment of time and effort. I am reporting on the in-depth information encompassing these processes for the potential future benefit of other state/provincially mandated organizations that may embark upon the development of a new, innovative program.

The authors of any new program offering at C-1 strived for quick approval at the state/provincial level:

[C-1-4]: In order to make any kind of a submission to [*the S/PEA*], which as you know, was done quite early with the [*MS degree*] proposal, you have to have what looks like a well fleshed out curriculum. Strangely enough after an approval is in place, there's no expectation that you use any of that. (...) I find it a bit bizarre, so in a way things are put together logically and sensibly but quickly for [*the S/PEA*] submissions with the understanding that [it] may not be a final curriculum. (44, 46)

The review process resembled the traditional Spanish justice system, where a written proposal was submitted to a group who met 'behind closed doors.' The process did not permit the authors to deliver a presentation or furnish an educational overview of the proposal to the 'judges.' Everything about the proposal had to be conveyed in writing. If the S/PEA had any specific questions, the Dean and Program Development Officer were 'on call' and made themselves available to answer specific questions by phone.

The submission preparation team obtained important business intelligence that suggested no members of the S/PEA had ever heard of KM or were even remotely aware of the potential market for such a professional degree. Members from other well established universities who sat on the S/PEA may have been surprised by the submission. Institutional departments at other universities in the state/province where KM might be an

appropriate offering had not yet shown interest in developing or trying to obtain approval for such a proposal.

Since no mechanism existed to educate the members of the S/PEA, they needed time to develop an appreciation for its proposed educational value. C-1 was somewhat unsure where to position the degree to be granted, i.e., should it be a specialized MS (with a technology focus), or an applied MA professional designation in KM, or a concentration within an existing approved degree, like the MBA? The initial proposal (referred to as a *Letter of Intent*) was submitted, but not approved.

Initial Proposal to the External Education Authority at C-1

In the initial proposal to the S/PEA, the team proposed an innovative degree program that would lead the evolution of this new, emerging field and contribute to establishing KM as a discipline. However, the S/PEA indicated that the proposal lacked substantial conceptual framework. The issues and concerns associated with deficiencies were described by the committee members of the S/PEA in detailed feedback letters sent to the President of the University (quoted later in this subsection to provide a detailed perspective of the sensemaking challenges by the members of the S/PEA).

The S/PEA suggested a location for the degree within another program. The team did not initially embrace this advice, but later came back to it to salvage the launch of a repackaged KM program:

[*The University*] would better serve themselves and their clients by developing this proposal as a new stream within the already existing Master of Business Administration (MBA) as the new proposal looks more like an innovative stream within a management degree rather than an MS degree. (C-1 Source Document # 4, p. 2)

Considering the fresh ground being broken by the University, the feedback from the S/PEA came as no surprise. An S/PEA member from a notable research university in the state/province voiced his set of critical concerns (C-1 Source Document # 5, p. 1):

1. It seems reasonable to expect that a graduate degree should be based on an identifiable body of research based knowledge. (...) it is not clear from the proposal that there is a body of literature and knowledge on which to base the degree. [*The university making the proposal*] should be required to identify the body of research literature on which the program will be based.
2. The proposal is silent on the qualifications of [*the university making the proposal*] faculty to teach and conduct research in this program.
3. Many new programs use courses and material from established disciplines. Those charged with evaluating the program can rely on a common understanding of the field and courses to evaluate whether the courses and program are substantive and comprehensive. As the program is based upon an emerging field, the proposal must identify the topics and areas that will be covered. Lacking such information it is not possible to judge whether the courses are substantive and sufficiently comprehensive.

Other committee members of the S/PEA from smaller universities and colleges in the state/province voiced their concerns, ambivalence, and lack of understanding of KM, but overall strongly indicated that they were quite interested in the possibilities represented by this new field and felt there was an unsatisfied demand for such a program. There were numerous questions around:

- whether the focus was on IT or analysis;
- the doubts associated with the type of degree (MA, MBA, MKM, and especially the MS, since there was a feeling there was no 'science' here);
- the need for a new 'stand-alone degree,' rather than having a concentration or stream in an existing program;
- the fear that the concept of 'Knowledge Management' may prove to be ephemeral and a fad;
- the potential use of contracted faculty members instead of full-time tenure track faculty;
- the natural extension of an applied professional degree program in this area to existing undergraduate programs in commerce, information systems, and computer science; and
- the lack of a progressive stage to a PhD program.

After the first round of submission and rejection, the University hired an educational consultant to carry out a Program Review that would be attached to the revised *Letter of Intent* for the MS in KM degree. This *Letter of Intent* was amended, enriched, and submitted four times before the university was officially told that the MS in KM was disapproved.

Second Proposal Submission to the External Education Authority at C-1

In the second formal proposal submission to the S/PEA the KM program was again reviewed in advance by an external educational consultant and was packaged as an applied professional degree—an MKM (Master in Knowledge Management). The S/PEA again disapproved. None of the members of the S/PEA had ever heard of such a professional degree—and this might have been the first such KM degree of its kind. Novelty was not considered a favourable selling point.

The S/PEA expressed approval in the proposed packaging of the degree as a “self-contained, applied, professional degree. A terminal degree,¹⁰ not a stepping stone to a PhD” (C-1 Source Document # 11, p. 1). However, the S/PEA still expressed its concerns in their Spring 2000 letter, especially with some of the comments made by the external program reviewer that had been attached to the submission:

While [*the program reviewer*] commends [*the University*] for being bold and innovative, [*the program reviewer*] also raises a number of concerns and cautions...stating the program did not have coherence and does not have a foundation. ... The [S/PEA] is not prepared to approve a program that does not have a framework.

A second and related concern is that the core faculty for this program has apparently not yet been hired. There is a close relationship between a program’s framework and its core faculty. [*The institution*] may choose whichever one it wants to create first: the core faculty or the framework.

Without a framework the [S/PEA] is unable to recommend approval of this program... (C-1 Source Document # 11, p. 1–2)

One of the participants expressed his experience with the submission process and the S/PEA:

[C-1-3]: And I’m not sure whether it was (...) [the first meeting with the S/PEA] or following the [*external program review consultant*] review, we actually went to

¹⁰ The use of the phrase “terminal degree” throughout the interviews refers to a graduate degree where no further academic work was planned. This should not be confused with the generally accepted usage where “terminal degree” refers to a PhD degree, i.e., the termination of academic pursuit.

[S/PEA]. (...) The Chair of the Advisory Board [came along to the meeting] and we both kind of got eviscerated at that meeting for largely the same reasons.

I mean they just couldn't really understand that this was really an academic discipline and it was really just that you were taking some courses from here and there and putting them together.

[INT]: So they ascribed some meaning to KM but they saw it as an existing mosaic, whereas you were proposing a development of a program that would actually create something new.

[C-1-3]: That's exactly what we said to them. (13–15)

Proceeding Without an Approved Submission at C-1

The team was now behind schedule in offering a timely degree that the marketplace seemed to be asking for, and had to quickly adopt a different strategy. The team internally proposed a Graduate Diploma and a KM concentration consisting of four KM courses in the MBA program—an already approved and well understood Master's program where a small number of new courses would be added.

S/PEA approval was not required for the Graduate Diploma or the MBA with a KM concentration within an existing program. Additionally, the team proposed to offer a Graduate Diploma in KM that also did not require explicit approval of the S/PEA. While waiting to receive approval for the MKM, the other two offerings were advertised, promoted, and received enrollments that began to justify the investment in core faculty.

Anecdotal evidence suggested that there may have been some reluctance to approve a novel program from a less established university. By the time the MKM program was disapproved by S/PEA, none of the other established universities had pulled together a KM proposal in competition to C-1, even with the lengthy delays. Within a short time the MKM proposal was resubmitted and approved as an MA in KM.

The institution was almost graduating its first cohort of Graduate Diploma and MBA (KM concentration) students when it began to advertise and actively promote students to consider its new MA in KM program. The initial enrollment was not what had been anticipated, but within 6 months a number of Graduate Diplomas had been used by

individuals to jump start the MA degree and a sufficient number of new students enrolled to kick off the first cohort.

In summary at C-1 the significant inhibitors holding back S/PEA approval were:

- lack of understanding about how the S/PEA operated, and thus, a difficulty in positioning the type of degree the S/PEA might find more attractive;
- lack of knowledge about the new, emerging field of KM by the members of the S/PEA;
- an inability of the university submission team to be permitted to formally present the proposal in person to the S/PEA and, consequently, educate the members of the S/PEA about KM;
- a conservative approach on the part of the S/PEA to approve programs that represented a departure from established academic programs; and
- the inability to get approval for a program that lacked a framework and core faculty to design it.

No External Educational Authority Approval Required at C-2

On the other hand, C-2, being a privately-funded institution, did not experience this type of undertaking to get approval for its curriculum. C-2-1 and his/her committee invested a great deal in the front-end educational awareness process with members of the university community. The two Deans and the Provost were also brought up to speed in their awareness and knowledge about KM very early on in the program's conception. These activities contributed to a much simpler, easier, and quicker approval process of the new KM program by the internal CRC. No external approval at a state/provincial level was required of this private institution.

5.3.9 Use of IT in KM Program Design

Both C-1 and C-2 found that email and hardcopy documents were the easiest and optimal mechanisms for sharing information amongst all program participants. Since both were on a tight deadline to create an offering and deliver the new program, there was a feeling that a sophisticated groupware or KM tool might require too much investment in its

development, deployment, training, support, and sustainability. Too much was at stake to try to dovetail an untried and untested tool into such short timelines.

A number of the participants at C-1 had expressed that the lack of an IT-based KM tool or technology (other than email) during the design and development may have been a noteworthy shortcoming:

[C-1-3]: No we didn't [use KM collaborative tools], but you know, we did talk about it a lot. And, we were going to build a kind of a whole web site around with the discussions groups and all the rest of it. And I think we may have got something up but it wasn't used. (162–163)

It's quite interesting. I'm fascinated by that whole area of demand vs. requirement vs. utilization. (...) especially in this new job where there is a constant demand for all kinds of tools and modifications to existing tools and systems and all this kind of thing. So there is a huge demand. "Is there a requirement?" is the question I would like to ask and get clarity on. And does that requirement match with strategic drivers?

And then if that demand matches a strategic driver and you do it, will it be used? Because you have to make all those connections and they all have to be yes, right? And frequently only one of them is yes, well sometimes two, but then the utilization one isn't ticked so the whole thing was a waste of time. And I'd like to find a better way of pulling that lot together. (167)

The overriding feeling was that the KM tools and technologies for the formative stages would have been more an impediment than an enabler. Once the programs got underway full-time, IT-based KM tools and technologies—especially Community-of-Practice (COP) tools—became significant contributors to each institution's program delivery.

5.3.10 Institutional Support

Competing programs were being initiated within C-1 at the same time as its KM program. Nonetheless, there was a prevalent feeling that the KM program was different and unique in comparison to the other new programs being considered for development. Very little direct competition from these other programs was reported, either in terms of program resources or budgets. The KM program was considered very innovative, and therefore garnered more attention than other programs that had already established a profile throughout the academic community as 'mainstream' programs. Regardless, there

was little extra funding available to hire lots of full-time faculty, so the staffing was done incrementally and through adjuncts.

The Provost and the two Deans involved at C-2 became very supportive of the KM initiative and committed to its development and delivery. Some insignificant turf battles did occur, as you might expect in any university where program revenue is determined by the student ‘headcount,’ not by the number of students shared in a dual program. The decision-makers remained enthused, but pragmatic, and decided to launch their innovative program without the investment of large amounts of capital or new faculty resources. Courses were extended to include KM topics, faculty were asked to take on new KM courses, and adjuncts were enticed to teach new KM courses.

5.3.11 Advisory Board Member Selection

Initially at C-1 the first few meetings were comprised of a large number of Advisory Board members, estimated between 10 and 15 participants. One of the informants commented:

[C-1-1]: (...) the kinds of people that are on my Advisory Board. (...) sort of [a competitive intelligence type of guy (...), the [*multi-national high-tech enterprise*] high flyer on the West Coast kind of thing, and then other people that are really interested in it and pushing it within their organizations, (...) even in the practitioners of it, there is a real mixed bag. (...) background in Municipal Government and (...) [*a financial institution*] and so on. So you’ve got an interesting kind of mix of people there. (6)

Other senior university administrators and community members associated with the program’s birth had no actual experience or previous exposure to the emerging field of KM. In fact, material derived from the interviews and documentation suggested that many senior administrators were unaware of the new field called KM but worked very hard to acquaint themselves with it as the program evolved.

At C-1 and C-2 the KM program leaders explicitly chose Advisory Board members who were either:

- known KM practitioners,
- sympathetic and interested members of the extended academic community, or

- executives or managers whose role included the management of KM business units.

5.3.12 Curriculum and Course Design Processes

Advisory Board Involvement in Curriculum and Course Design at C-1

At C-1 the curriculum and course design activities occurred in tandem. The C-1 KM Program Development Timeline (see Figure 5-1), outlined the plan of activities required to get the first cohorts graduated from the new KM programs. The timeline also illustrated the duration of time that transpired from the program's conception until it was approved and launched.

The Advisory Board was tasked with developing the overall KM curriculum through a learning outcomes, competencies, and skills modeling exercise:

[C-1-3]: What we asked the Board to do was to think about outcomes. So rather than get yourself knotted up in curriculum and content, think about outcomes. So think about a practicing individual graduating from a program in Knowledge Management. What would you expect them to be able to do (...)? (...) So they were statements of competency or statements of ability.

Those were the basis on which we designed the core curriculum. So we took those statements and said, OK what content and skills and knowledge and attributes would be required to produce an individual who could do that statement. So that keeps the Advisory Board out of the detail; but allows them to think about the practitioner. (65)

The program design reflected the consensus and pedagogical preferences of a number of participants; but it also had to deal with the somewhat unrealistic expectations conveyed to the team members by prospective students:

[C-1-3]: I wanted to have academic depth to the program so I didn't simply want it to be a toolbox applied skills approach to KM. So I wanted a balance between tools and techniques and depth. What we found was that many of the students in the program had expectations that (...) whenever it was that they went back to work, that they would be instant KM practitioners.

(...) and that we would just simply be able to somehow hand them a toolbox. (...) The toolbox, it was just like plumbing. If you had the right toolbox with the right tools in it and you knew how to use those tools you'd be able to do it. And (...)

they didn't have a lot of time for some of the stuff we were trying to do around principles. (109–111)

[C-1-4]: And then if you look at our model and how we design education here at least what we try to do is have things very applied, very learner focused. So it's not someone coming in, quitting their job, spending two years on campus full time and immersing themselves in theory and then going back and trying to readjust to the workplace.

It's people bringing their day-to-day problems from their professional field with years of experience into occasionally a classroom or more often an online forum and doing activities that are having their employers, often at the clients, to try research things, solve things, move things ahead, especially with that thesis or major project. (149)

A Curriculum/Course Design Meeting was scheduled in October 2001. A number of experts and candidate faculty (estimated at 6) were invited for a weekend workshop to flesh out the curriculum design elements. The designers were asked to use the learning outcomes-based teaching and assessment method derived from Alverno College in Milwaukee, WI. The process was described in detail by one of the participants, who also alluded to the opportunities the workshops presented to assess the candidate faculty:

[C-1-2]: The people who were invited to that were basically selected from among those who had submitted applications to be faculty. For the most part those people were complete unknowns to anyone at the University, and some of them ended up in the same room to hammer out the curriculum for the KM program which I gather was a very interesting process because what they looked like on paper and what they looked like when they got here wasn't necessarily the same thing.

So they came with different levels of understanding of what Knowledge Management meant to them. I think some of them probably came quite prepared with lists of texts and recommended readings and drafts of curriculum. Others came saying, "Well, I applied, but I don't really know what I'm doing here" so I think that was a very interesting process.

And then we went away from that with sort of design teams around particular courses but it wasn't clear at that point and time who was going to teach it so you had a group of people who were told you need to work on the information systems part that we're going to deliver on the residency (...).

Activity Name	1999				2000				2001				2002				2003				2004			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1 Idea/concept for KM Program explored and proposed internally, resulting in the preparation of a Letter of Intent	◇																							
2 Team members researched universities offering KM Programs, reviewed Federal Government KM documents, read trade literature describing KM	◇																							
3 KM Advisory Board recruited		◇																						
4 Team established KM Focus Groups and met with 1st focus group to envision high level program design		◇																						
5 Team met with 2nd focus group to envision high level program design		◇																						
6 Team leader attended Delphi International KM Summit (IKMS'99)			◇																					
7 Team developed formal proposal and submitted as a Letter of Intent to S/PEA (MS in KM)			◇																					
8 Team initiated internal market research study			◇																					
9 Team received S/PEA disapproval to proceed with MS in KM as well as feedback from numerous S/PEA committee reviewers primarily indicating shortcomings in the proposal			◇																					
10 Team revised original Letter of Intent proposal and re-submitted to S/PEA (MS in KM)			◇																					
11 Thought Leader developed agenda, collected background material, packaged and distributed material for 1st meeting of KM Advisory Board			◇																					
12 KM Advisory Board members attended 1st program framework development meeting				◇																				
13 1st External Review performed on proposal by external educational consultant					◇																			
14 S/PEA disapproved of MS in KM after reviewing original proposal (Letter of Intent) and 4 revisions						◇																		
15 Initial advertising and interviewing for KM core faculty--No one initially hired							◇																	
16 KM Advisory Board members attended 2nd KM program framework development meeting								◇																
17 External Consultant hired to draft and construct the KM program framework									◇															
18 Team proposed Graduate Diploma in KM and negotiates with Business School to offer an MBA (KM Concentration)										◇														
19 KM Advisory Board members attended 3rd KM Program framework and curriculum development meeting											◇													
20 External Consultant finalized the KM program framework and prepared S/PEA submission												◇												
21 2nd formal proposal reviewed and submitted to S/PEA (MKM-Master of Knowledge Management)													◇											
22 Potential faculty, experts, and selected KM Advisory Board members attend retreat/workshop to flesh out KM Curriculum														◇										
23 2nd External Review performed on proposal by another external educational consultant															◇									
24 S/PEA disapproved 2nd formal proposal (MKM)																◇								
25 Team created Graduate Diploma in KM offering and Business School MBA (KM Concentration) offering																	◇							
26 Team changed MKM to MA in KM and resubmitted to S/PEA, which subsequently approved it																		◇						
27 Advertised for KM core faculty																			◇					
28 Interviewed candidates for KM core faculty																				◇				
29 Hired KM core faculty																					◇			
30 University graduated first cohort with Graduate Diploma in KM																						◇		
31 Team launched MA in KM																							◇	
32 University graduated first cohort with MA in KM																							◇	

Figure 5-1 C-1 KM Program Development Timeline

And this team over here should be working on the issues around cultural change and leadership and you guys over here you've got to do...the overview section, the foundation, what is Knowledge Management. But none of you, and we all know you would like to teach, know who is going to teach. (...)

So that group was really.... I don't think there was much sense of cohesion. I think there were probably some personalities that really didn't fit together. And out of that somehow a few people emerged to the top and ended up teaching courses.

(...) that was the idea when people were brought together. It was a chance for the University in an informal setting to be able to look at the expertise and the teaching skill of people who had...and the teamwork skills knowing that we were looking to collaboratively develop a program because we didn't have the expertise in-house. (95-97)

During the curriculum/course design sessions, the specific learning outcomes were sufficiently detailed along with a set of anticipated skills. Depending upon the availability of time by the course designer or team of designers, the instructor or team would be tasked to design the course in additional detail (sometimes including a schedule of topics, lesson plans, and bibliography of readings). Regretfully, very little in terms of notes and documents were preserved from these activities.

Feedback from the Advisory Board was a very important assessment method for determining that the program was 'on track,' but it was not easy to obtain high quality feedback:

[C-1-2]: The follow up from Advisory Boards in terms of really giving substantive feedback on content has been fairly limited. Out of a Board of lets say 12 or 16 it is hard to remember... There would have been probably somewhere between two and four people who really would have given a lot of feedback on what they thought should be part of the curriculum.

Otherwise in a meeting people would offer suggestions, but I don't remember the Advisory Board being particularly instrumental in shaping the vision for the program. In my view they were more responsible for just making it happen. (54)

Advisory Board Involvement in Curriculum and Course Design at C-2

Curriculum design drove the detailed course design processes. Course design was predicated upon the identification of appropriate potential faculty members, Advisory

Board members, and other experts who wished to be associated with one or more course design workshops. Once these individuals were identified, the matching of a course to a course designer was determined by:

- background, qualification, and experience;
- interest and commitment;
- availability for planned retreats; and
- commitment to finishing the detailed course design activities once they were underway.

The design activities were rather informal, but usually included round tables, brainstorming sessions, semi-facilitated sessions, and structured facilitation sessions. Later on when a candidate faculty member had been selected, the new instructor would take the course design and develop the lessons plans, detailed assignments, exercises, and lecture notes. The selected instructor would also be expected to develop an assessment method to determine that the learning outcomes had been achieved by the students. Some of the core participants in the KM program would be involved in course design review, approval, and quality assurance.

A number of shortcomings emerged from this process. For example, the University accepted the offers by a couple of Advisory Board members to teach some of the courses. The members appeared interested and committed, but when the time came, one Advisory Board member was too busy to teach and deliver his course and another Advisory Board member met with an untimely and fatal accident. The loss of teaching resources created additional strain on the program.

Committee Involvement in Curriculum and Course Design at C-2

Few notes or documents were preserved at C-2 from the curriculum and course design process activities. Not much was recollected in interviews where informants were asked to describe the Program Approval Process. According to conversations with the thought leader, there was a university Curriculum Review Committee (CRC) that had to be consulted with the proposal for new programs. After the KM Centre/Center had been

established and the KM Certificate was approved and offered, an *ad hoc* Program Development Committee (PDC) was commissioned.

The PDC consisted of invited faculty, deans, directors, and internal and external Advisory Board members. The goal of this committee was to pull together the curriculum that could be offered as a KM program, formalize it, and present it to the University's CRC for approval and endorsement. The CRC had the authority to approve budgets and faculty lines that would be associated with a new program. The Deans of the two schools involved in offering this joint program were responsible for working out the cost/revenue sharing model and reallocation of any faculty resources or courses that needed redesign to incorporate new KM topics. Figure 5-2 furnishes an overview of the process.

Much like at C-1, course design activities were informal and usually included round tables, brainstorming sessions, and semi-facilitated sessions. The courses for the Certificate program encompassed a number of new elements and topics, but usually incorporated material from seminars and workshop where the topics had been tested. Approval by the Curriculum Review Committee was necessary:

[C-2-1]: So I submitted course syllabi and a proposal (...) [for] a course here for the [*LIS School*] as well as [*Business School*] making it a cross disciplinary course. And that went through the curriculum committee both at [*LIS School*] as well as [*Business School*], (...) they liked the syllabi and the proposal I had submitted. So they said, "Why don't we try it out on a trial basis." Because any course that we introduce here we will try out for two semesters and then we will incorporate that in our curriculum. So it went as a trial basis and it received very good ratings. (4)

The initial Certificate course offerings received critical input and feedback from instructors as well as the students. The courses were refined, updated, and improved, thus, increasing their quality.

Most courses were not redesigned from scratch, but instead were the repackaging of already existing courses, with possibly an incremental extension or replacement to adapt

it more to the flavour of KM. Thus, the approach was a matter of retitling and revamping the selected existing courses and packaging them into the dual degree concentrations.

In summary, at C-2 the thought leadership furnished by C-2-1 launched the strategies and the KM program development followed. Again, conventional approaches to curriculum and course design were embraced by the committees. Initially very little in the way of new curriculum and course design was developed; but followed closely the activities described in Maestra (1996). In fact the initial offering was based upon incremental revisions to existing courses because of financial and faculty line constraints.

5.3.13 Inclusion–Exclusion of KM Program Components

Scoping KM Program Components at C-1

At C-1 the process to determine inclusions and exclusions was carried out by a combination of consensus, a rough understanding by the Advisory Board, and the preferences of the thought leader. One of the leaders spoke whimsically about this problem:

[C-1-3]: I think one of the things that I said to the Advisory Board very early on, was that if you put together a committee to build a degree, you will end up with a degree that is at least twice the size of the degree that is possible.

So you will have to eliminate and/or merge things as you evolve the degree and as you talk about it. And so everybody is going to have to be willing to give up certain of their pet topics, which others will not consider to be as important. There was nothing more formal than that. (61)

[C-1-3]: It was an iterative process, which ended up with the core curriculum and the Board essentially saying, yes, that just about captures it. (63)

There was a lot of concern expressed by many participants about the process of including and excluding topics, and linking them in an internal curriculum structure. Some mentioned that faculty team-based curriculum development in multiple courses was extremely challenging. Others suggested that the inclusion of core faculty earlier in the process would have been advantageous, since individuals would have developed a grasp of the evolution of the course along with the thought and discussion that had gone into crafting the proposed course syllabus. Much of the course content had been driven by the

strong personalities and opinions of the Advisory Board, including occasional ‘arm wrestling.’

Overall, the conceptual framework comprising four types of capitals helped position a number of epistemological problems:

[C-1-2]: Then (C-1-4) tried to illustrate [his/her] vision of how the various aspects of Knowledge Management fit together in a (...) document that had lines around particular areas that were permeable to demonstrate that the flow between these was content.

And, it was sort of fluid whether you were talking about social capital or intellectual capital or ecological capital and [he/she] was trying to illustrate nested systems and that’s partly a reflection of [his/her] background (...), so very, very strong systems thinking framework which I would say wasn’t present in the original conceptions of the program. (22)

Specific areas that certainly received prominence were COPs, Intellectual Capital, Intellectual Property, Organizational Behaviour, and Change Management. One area that was surprisingly omitted was Library Science:

[C-1-5]: There was actually early on some discussion about looking for a partnership [with a LIS school] (...) but it didn’t go far. And I think because there was a recognition from me and from others, that this isn’t really a library thing.

Being able to make those kinds of connections with other information related positions should be a strength for the Knowledge Manager. And a Knowledge Management group manager could potentially grow out of any number of those positions but the competencies would go across, at least that was a view of it. (39–40)

In summary, at C-1, the thought leader who launched the curriculum and course design/development processes endeavoured not to bias the Advisory Board and designers with his/her personal opinions. He/she had acquired experience in previously unrelated curriculum design initiatives and wanted the curriculum framework to be driven bottom-up. The designers needed to eventually take ownership of the course contents and their linkages. Much of the course design content came from the experience of the Advisory Board practitioners and candidate faculty.

Activity Name	1999				2000				2001				2002				2003				2004			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1 Idea/concept for Knowledge Management Centre and Program explored internally	◇																							
2 Internal KM Advisory Board established and members recruited	◇																							
3 Team proposes Graduate Certificate in KM		◇																						
4 Team leader proposed the establishment of the Knowledge Management Centre		◇																						
5 Knowledge Management Centre established		◇																						
6 Recruitment began for Knowledge Management Centre		◇																						
7 Team leader selected to head Knowledge Management Centre			◇																					
8 Graduate Certificate in KM launched			◇																					
9 KM Workshops begin to be offered on campuses			◇		◇	◇																		
10 First cohort with Graduate Certificate in KM graduated							◇																	
11 Graduate Certificate in KM continued to be offered while MS in KM was being developed							◇		◇				◇				◇				◇			
12 External KM Advisory Board established and members recruited								◇																
13 KM Advisory Board and team leader begin development of MS in KM Program										◇														
14 Curriculum and Course Design activities begin											◇													
15 Team leader developed formal proposal for MS in KM and reviewed with University Curriculum Committee												◇												
16 Team receives approval to proceed with MS in KM													◇											
17 Market plan for KM Program developed														◇										
18 Faculty from SLIS and Business School reassigned to accommodate workload represented by new KM courses															◇									
19 Joint program MS in KM (School of Library and Information Science and the Business School) launched																◇								
20 First cohort with MS in KM graduated																							◇	

Figure 5-2 C-2 KM Program Development Timeline

Scoping KM Program Components at C-2

The process to determine inclusions and exclusions at C-2, like at C-1, was carried out by a combination of consensus, a cursory review by the Advisory Board, and the final decision by the thought leader. A larger volume of recollections were available at C-2 from the core participants who were directly involved in the curriculum and course design and development, and who drove the vision for the program.

The C-2 team scoured existing programs where KM was taught to try to formulate a framework of the potential pieces to offer and omit:

[C-2-8]: Let's look at what's out there, who is offering it and let's first just assess that. It doesn't mean we have to go there so we came up with a laundry list of courses and descriptions in different programs and really looked at the mix. OK some of the colleges are offering this and they have a technical piece and non-technical piece, a work study piece, an independent study piece and we looked at a couple of different programs.

The other thing they [the team] did was actually talk to people. But they talked to academics within the (...) field that had probably published and said, "OK Chun Wei Choo has a new book. Let's see what the chapters are in there and let's call [*a well known academic*] up at the [*name of another university*]." Let's look at what his PhD students are doing dissertations on, what are the trends going forward? (20)

There was a discernable tension between the technical and the theoretical side of the material to be taught: business intelligence vs. competitive intelligence, data analysis vs. systems analysis vs. process analysis, data mining vs. text mining, IT vs. IM, MIS vs. Librarianship, organization of information vs. metadata, programming vs. database management, and soft skill vs. hard skills.

The Dean of the Business School described his/her approach for including or excluding elements in the KM program:

[C-2-5]: (...) it's practicality because a lot of times we as academics put together beautiful frameworks that have no hope of actually having relevance for the students. I generally try to stay with more practitioner-oriented, which is why I referred to Harvard Business Review or Sloan Management Review rather than some of the more inaccessible journals.

So it was more of a practitioner focus and generally I made a decision, that these were appropriate as Knowledge Management not so much that they were Knowledge Management but they fell into the flow of the concepts at that point, intellectual capital.

And quite honestly at that point in my course I started to talk about implementation and one of the great challenges in Knowledge Management systems is implementation. So that was always very appropriate there too. (34)

Part of the challenge of selecting topics and courses for inclusion was also trying to ferret out in advance the profile of the target audience member and the skills they might require: a student considering an MBA vs. a student considering an MLIS. In the development of upper-level electives for the students to take, C-2-5 stressed the need to always give the students a range of choices for courses that were similar, but needed to be slightly different depending upon the joint program's emphasis. The two different schools wanted to add their own relevant spin to the courses being taught in Systems Analysis and Database Management.

Competitive Intelligence was considered a very important course to offer because of the experience of the faculty who proposed to teach it as well the practical projects carried out by the students in it:

[C-2-6]: There's a fabulous course that was offered on Competitive Intelligence. Our students just loved that class. It was practical in that it showed what you could do with the information in terms of managing your business to develop more business. (...) [The instructors] were truly and unarguably knowledge managers. The jobs they gave the students, tasks I should say, assignments brought them out into the field and made them manage real data. (30)

On the other hand a future course in Change Management was considered an integral element of KM, but it was not initially included in the program because of the lack of a qualified adjunct instructor to teach it.

The need for practical as well as situational learning experiences was often emphasized:

[C-2-8]: It's very, very important that each class has an experiential piece to it where people can actually take the knowledge that they have acquired in the ten

or twelve weeks and then apply it to a case study format or some kind of contribution at a business to validate those concepts in a real world environment. (...)

Being that this wasn't a research based institution and we were targeting people who were going to go out into the work force, I felt that that would be the keystone in the success of the program, (...) actually being able to use these skills. And have coaching in a safe environment where you could use them and get feedback before you (...) actually went out and did it for a living. (99)

In summary, at C-2 a top-down approach with a lot of collegial interaction was used to build the shared/joint courses and identify the topics that would be extended from existing courses or located in new courses. The emphasis was on practical experience, regardless of the topic. Over time additional electives would be selected to make available new subjects that would be topical for the KM program.

5.3.14 Knowledge Management Program Offerings

KM Program Offerings at C-1

At the time of the investigator's research and interviews, C-1 was offering three KM program options:

1. Master of Arts in Knowledge Management,
2. Graduate Diploma in Knowledge Management, and
3. MBA with a KM concentration.

The titles of the courses in Table 5-3 were sanitized to maintain anonymity, but retain the intent of the curriculum design.

The MA in KM was an interdisciplinary cohort-based program and consisted of 42 credit hours that would be taken over a two-year period. The course topics included in this program consisted of themes encompassing the curriculum designers' views of the emerging field of KM.

The GD in KM was also an interdisciplinary cohort-based program and consisted of 18 credit hours that would be taken over an eight-month period. It was a scaled down version that could be used by a learner if they wished to apply it as credit towards either

the MA in KM or the MBA with KM concentration. The course topics were a subset of the MA in KM degree program.

#	KM Programs	MA in KM	GD in KM	MBA KM Conc.
MA KM Core Course Requirements:				
1	Action Research Analysis Methods and Techniques	X	X	
2	Building Individual and Collaborative Leadership in Communities	X	X	
3	Business Process Management and Team-based Technologies	X	X	
4	Capstone Seminar	X		
5	Capstone Project	X		
6	Corporate Sustainability in a Knowledge Economy	X		
7	Foundational Principles of KM			X
8	International Strategies in Complexity Science	X	X	
9	KM Standards, Specifications, and Protocols	X	X	X
10	Knowledge Assets: Intellectual Capital and Intellectual Property	X	X	X
11	Management and Organizational Information Systems	X	X	X
12	Specialized Topic	X		
13	Techniques for Innovation and Creativity	X		
MBA Core Course Requirements				
1	Capstone Consulting Project			X
2	Contemporary Business Environments			X
3	Corporate Financial Management			X
4	Social and Environmental Strategies for Corporate Sustainability			X
5	Global Management Issues in the New Economy			X
6	Human Resources and Stakeholder Management			X
7	Law of Contract: Types, Enforceability, and Breaches			X
8	Leadership Case Studies			X
9	Leadership Skills and Competencies			X
10	Management Consulting Skills and Practice			X
11	Managerial Accounting and Financial Control			X
12	Marketing Strategies and Management			X
13	Research Analysis Methods and Techniques			X
14	Strategic Management Principles, Concepts and Analytical Methodologies			X

Table 5-3 Case-1 KM Program Course Offerings

The MBA with a KM concentration was an MBA cohort-based program and consisted of 66 credit hours that would be taken over a 2-year period. It required a specialization in a particular field of business coupled with a KM concentration coming from four KM-related courses worth four credit hours each. The course topics included in this program consisted of standard business and management themes, courses comprising the specialized field of business, and four elective courses that were extracted from the MA in KM program.

The initial course offering received and solicited significant input and feedback from other instructors and the students. The results were new and improved courses. The University was committed to increasing the quality and value of the courses by incorporating double-loop learning into the process of course design. The courses also incorporated the pragmatic side of ‘doing KM:’

[C-1-2]: The things that they felt they needed in their own companies or that they had observed as part of consulting practices. They said you know graduates should be able to do this, this, and this. That tends to be quite task focused or project focused so some difference between an outcome and particular tasks. But we looked at that skill set and really tried to build them into what the learning outcomes were. (99)

I queried one of the participants about the flexible positioning of the institution’s KM program offering in terms of a diploma vs. a degree:

[C-1-6]: If KM continues to penetrate and be adopted by business in North America or around the world, then the only way you are going to support it is with full education programs and the diploma becomes an option within that but probably a laddering step into a degree. And I think we’re crossing that boundary just now.

I think that’s where we are today in the world. Actually we’re just about dead center, I figure. Actually, we’re not fully on the diploma side, we’re not fully on the degree side, we’re just in the middle. Next year, we’ll have slipped to the degree side and every year after we’ll get more and more that way.

And, it won’t de-value the diploma, but it will serve a very different purpose. It will be for the training position prior to someone coming in getting a degree, prior to them taking the more senior job. So it will be maybe an entry level training

junior worker level requirement and the degree will be the manager, more senior manager. (124)

In summary, at C-1 three offerings were marketed to potential students reflecting a suite of topics and courses that provided a range of learning outcomes encompassing the four distinct capitals that formed the basis for the University's conceptual KM framework.

KM Program Offerings at C-2

C-2 was offering two KM program options at the time of the investigator's research and interviews:

1. Master of Science in Knowledge Management, and
2. Graduate Certificate (GC) in Knowledge Management.

The titles of the courses in Table 5-4 are also sanitized to maintain anonymity, but retain the intent of the curriculum design.

The MS in KM was an interdisciplinary program and consisted of 13 courses comprising a minimum of 39 semester hours that would be taken over two to four years, depending upon the scheduling of courses and the student's workplace commitments. The course topics included in this program consisted of the major themes encompassing the joint degree program from the two participating schools, (i.e., the LIS and Business Schools).

The GC in KM was also an interdisciplinary program and consisted of 4 courses of 3 semester hours each, which could be taken at the pace of the enrolled student. It was a scaled-down version that could be used by a learner towards the MS in KM. The course topics were a subset of the MS in KM degree program.

In summary, at C-2 two offerings were marketed to potential students reflecting a suite of topics and courses that provided a range of learning outcomes integrating the source degree programs of Business, Computer Information Systems, Information Science, Library Science, and Management.

5.3.15 General Learning Outcomes

General Learning Outcomes at C-1

The proposed general learning outcomes for the KM program at C-1 evolved as proposals went through further revision. In the 1998 internal *Letter of Intent* the integration of the basic framework three-tiered framework of Knowledge Management, Business Management, and Information Technology would “produce multi-faceted graduates able to ‘create, capture, transfer and use knowledge to enhance organizational performance’” (C-1 Source Document # 1, p. 1). This quotation was a footnoted citation the University attributed to a Federal Government organization’s discussion paper of 1998.

The proposal in 1999 entitled [*University*] *Proposal for a Master of Science in Knowledge Management* outlined a number of general objectives and outcomes the program should have (C-1 Source Document # 15, p. 4):

- The Master of Science in Knowledge Management will enable mid-career professionals to become knowledge managers who can capture knowledge and create knowledge systems, thereby enhancing workplace performance, facilitating succession, and enhancing corporate memory.
- Graduates of this program will provide their employers with the competitive advantage necessary to succeed and thrive in an ever-changing global environment. (...)
- (...) The essence of knowledge management is teamwork, a mix of skills and experience.
- Graduates of the Knowledge Management program will be well-versed in three major areas of study:
 - Knowledge Management
 - Management Information Systems / Information Technology
 - Business Administration.
- All courses in the program have a broad, interdisciplinary focus, enabling learners to develop critical thinking and problem-solving skills. Critical thinking skills are integrated with hands-on learning. Conceptual skills and cognitive theory are combined with the ability to use technology and work with people to create a knowledge-sharing environment that links a wide spectrum of disparate areas. Within each of the above categories, students will develop core competencies (...).

#	KM Programs	MS in KM	GC in KM	MIS Conc.	Mgt. Conc.	Info. Sci. Conc.
KM (Library and Business Schools) Core Requirements:						
1	Capstone Course/Practicum	X				
2	Database Management Systems	X				
3	Fundamentals of Knowledge Management	X	X			
4	Information Policy	X	X			
5	Knowledge Technologies	X	X			
6	Management Information Systems	X				
7	Organizational Analysis and Design	X	X			
8	Systems Analysis and Design	X				
MIS Additional Required Courses:						
1	Accounting			X		
2	Financial Management			X		
3	Introduction to Computer Programming			X		
Elective Courses: (chosen in order to fill requirements):						
1	Advanced Topics in KM				X	X
2	Business and Competitive Intelligence					X
3	Data and Information Mining (Mgt)				X	
4	Data and Information Mining (InfoSci)					X
5	Economics for Managers				X	
6	Financial Forecasting				X	
7	Fundamentals of Indexing and Abstracting					X
8	Fundamentals of Information Architecture					X
9	Information Resources Management					X
10	Information Technology for Managers				X	
11	Internet and Reference Desk Search Strategies					X
12	Knowledge Organization					X
13	Managerial Communications				X	
14	Metadata for the Internet					X
15	Organizational Behaviour				X	
16	Project Management				X	X
17	Telecommunications and Computer Networks				X	

Table 5-4 Case-2 KM Program Course Offerings

This document also highlighted the four key issues within the MS in KM that were central to the common theme throughout all the University's programs (C-1 Source Document # 15, p. 6):

- o Sustainable development,

- Entrepreneurship,
- Empowering leadership,
- Conflict management.

Finally, the 2000 proposal, *[University] Revised Proposal for the Master of Knowledge Management (MKM)*, provided another perspective of the general learning outcomes the team was trying to convey to those approving the program. Learners graduating from the program would be able to (C-1 Source Document # 3, p. 3):

- Analyze needs in the context of organizational goals;
- Scan the environment for key factors and trends;
- Plan knowledge management strategies;
- Lead the implementation of strategies from early pilot work and communication of success;
- Act as liaisons between various stakeholders and partners in KM initiatives within their organizations;
- Influence the systemic changes that may be needed for sustainable, measured and managed growth; and
- Graduates will have the skills necessary to develop knowledge systems and encourage a creative and vibrant knowledge-sharing culture, thereby enhancing workplace performance, increasing responsiveness and innovation, facilitating succession, and strengthening corporate memory.

In summary, at C-1 the general learning outcomes also paralleled the conceptual framework designed to guide the curriculum and course development.

General Learning Outcomes at C-2

As the KM Centre/Center at C-2 was created, the proposed general learning outcomes for the KM program evolved. The proposals for the MS in KM were drafted, published, and distributed to candidates. The original *KM Program Proposal* of 2002 outlined the goals of the degree program to prepare students to (C-2 Source Document # 1, extracts sanitized to maintain confidentiality):

- Analyze and evaluate organizational knowledge assets (both tangible and intangible) that comprise KM initiatives;
- Architect and deploy KM systems;
- Become familiar with KM tools;
- Develop analytical and tool-related skills and process knowledge of competitive intelligence;

- Develop leadership skills applicable to the new organizational knowledge sharing cultures;
- Identify KM in specific environments: executive, organizational, financial, legal, bibliographic, health, etc.;
- Support the mapping of organizational knowledge assets; and
- Understand KM concepts.

The brochure released for potential candidates in 2002 as part of the marketing collateral used a subset of the proposal goals, and stated that graduates of the program would (C-2 Source Document # 3, extracts sanitized to maintain confidentiality):

- Analyze and evaluate organizational knowledge assets (both tangible and intangible) that comprise KM initiatives;
- Develop analytical and toll-related skills and process knowledge of competitive intelligence;
- Identify KM in specific environments: executive, organizational, financial, legal, bibliographic, health, etc.;
- Support the mapping of organizational knowledge assets; and
- Understand KM concepts.

Finally, a University-internal *DRAFT Goals and Objectives* document about the KM Program of 2003 outlined an even higher level of abstraction of the goals encompassed by the program (C-2 Source Document # 2, p. 2):

The goal of the Master's degree in Knowledge Management is to provide an education to qualified candidates who will understand knowledge management principles and master knowledge management processes through an in-depth command of enabling systems and technologies, and who have the capacity to assume organizational leadership roles in knowledge management.

Contrasting an amalgamated and rationalized set of general learning outcomes quoted previously for C-1 with those for C-2 provided the set of possible loosely associated similarities presented in Table 5-5, but a tighter interpretation of the concepts associated with the vocabulary used in C-1 and C-2 suggested more differences than similarities in Table 5-6. At C-1 there were 15 distinct general learning outcomes derived from documents, while at C-2 there were 10 general learning outcomes discovered in the documents. When viewed broadly the general learning outcomes at both institutions were relatively similar. When viewed narrowly, only 33% of C-1's general learning outcomes were interpreted as similar to 50% of C-2's general learning outcomes. The contextual

#	C-1 General Learning Outcomes	C-2 General Learning Outcomes
1	able to create, capture, transfer and use knowledge to enhance organizational performance	analyze, evaluate, [and map] organizational knowledge assets, (both tangible and intangible), that comprise KM initiatives;
2	analyze needs in the context of organizational goals	analyze, evaluate, [and map] organizational knowledge assets, (both tangible and intangible), that comprise KM initiatives;
3	[capability] to develop knowledge systems	architect and deploy KM systems
4	[capability] to develop knowledge systems	familiar with KM tools
5	well versed in Management Information Systems / Information Technology	architect and deploy KM systems
6	well versed in Management Information Systems / Information Technology	familiar with KM tools
7	scan the environment for key factors and trends	develop analytical and tool-related skills and process knowledge of competitive intelligence
8	[capable of providing] their employers with the competitive advantage necessary to succeed and thrive in an ever-changing global environment	develop analytical and tool-related skills and process knowledge of competitive intelligence
9	[capability to] encourage a creative and vibrant knowledge-sharing culture	develop leadership skills applicable to the new organizational knowledge sharing cultures
10	act as liaisons between various stakeholders and partners in KM initiatives within their organizations	develop leadership skills applicable to the new organizational knowledge sharing cultures
11	plan knowledge management strategies	identify KM in specific environments: executive, organizational, financial, legal, bibliographic, health, etc.
12	well-versed in Knowledge Management	understand KM concepts
13	well-versed in Knowledge Management	understand knowledge management principles
14	lead the implementation of strategies from early pilot work and communication of success	master knowledge management processes through an in-depth command of enabling systems and technologies
15	[capability to] enhanc[e] workplace performance, increas[e] responsiveness and innovation, facilitat[e] succession, and strengthen corporate memory	master knowledge management processes through an in-depth command of enabling systems and technologies
16	well-versed in Business Administration	master knowledge management processes through an in-depth command of enabling systems and technologies
17	well-versed in Business Administration	capacity to assume organizational leadership roles in knowledge management
18	influence the systemic changes that may be needed for sustainable, measured and managed growth	capacity to assume organizational leadership roles in knowledge management
19	[possessing] critical thinking and problem-solving skills	capacity to assume organizational leadership roles in knowledge management

Table 5-5 Broad Association of General Learning Outcomes

#	C-1 General Learning Outcomes	C-2 General Learning Outcomes
3	[capability] to develop knowledge systems	architect and deploy KM systems
4	[capability] to develop knowledge systems	familiar with KM tools
5	well versed in Management Information Systems / Information Technology	architect and deploy KM systems
6	well versed in Management Information Systems / Information Technology	familiar with KM tools
7	scan the environment for key factors and trends	develop analytical and tool-related skills and process knowledge of competitive intelligence
12	well-versed in Knowledge Management	understand KM concepts
13	well-versed in Knowledge Management	understand knowledge management principles

Table 5-6 Narrow Association of General Learning Outcomes

use of vocabulary within each institution presented a challenge for comparisons. The separate curricula exhibited both heterogeneous and homogenous characteristics in the course topics and learning outcomes, depending upon the interpretive perspective (loose vs. tight).

Needless to say, at least seven years have elapsed since the inception of the programs. It was near to impossible for the participants to recollect the intent behind the original learning outcomes proposed. Thus, it was not possible to be definitive on which interpretation, broad or narrow, would be the best or most useful. For the purpose of discussion in the following chapter, I will adopt the broad interpretation.

In summary, at C-2 the general learning outcomes paralleled the underlying conceptual frameworks for the LIS and Business Schools. Nonetheless, in order to complement the already existing course themes within each school new courses were incrementally introduced, such as Business and Competitive Intelligence and Data and Information Mining. These courses integrated IT as a more intimate and pragmatic element than in courses in the past within the LIS School.

#	C-1 General Learning Outcomes
1	able to create, capture, transfer and use knowledge to enhance organizational performance
2	analyze needs in the context of organizational goals
9	[capability to] encourage a creative and vibrant knowledge-sharing culture
10	act as liaisons between various stakeholders and partners in KM initiatives within their organizations
11	plan knowledge management strategies
14	lead the implementation of strategies from early pilot work and communication of success
15	[capability to] enhanc[e] workplace performance, increas[e] responsiveness and innovation, facilitat[e] succession, and strengthen corporate memory
16	well-versed in Business Administration
18	Influence the systemic changes that may be needed for sustainable, measured and managed growth
19	[possessing] critical thinking and problem-solving skills

Table 5-7 Unique General Learning Outcomes for C-1

#	C-2 General Learning Outcomes
1, 2	analyze, evaluate, [and map] organizational knowledge assets, (both tangible and intangible), that comprise KM initiatives;
9	develop leadership skills applicable to the new organizational knowledge sharing cultures
11	identify KM in specific environments: executive, organizational, financial, legal, bibliographic, health, etc.
14	master knowledge management processes through an in-depth command of enabling systems and technologies
17	capacity to assume organizational leadership roles in knowledge management

Table 5-8 Unique General Learning Outcomes for C-2

5.3.16 Clarity of Vision and Goals for the KM Program

KM Program Vision and Goals at C-1

Most of the participants at C-1 shared the view that by necessity the architects of the KM program had to acquire and demonstrate a clear vision and very unambiguous goals for the program. However, from the beginning the program development suffered from the pendulum swing between a technology-based and a business-based degree:

[C-1-5]: (...) whether you decide that your Knowledge Management approach is going to be very tightly business focused or very much technology focused or very much focused on organizational culture and knowledge sharing and corporate memory and all of that good stuff. (221)

I know that there is some effort out there, or has been effort out there, to sort of brand Knowledge Management with different approaches. I don't know that that's it necessarily, but you know you can have a business school that is known for being the HR school to go to, or a business school that is really known for its work in marketing or international whatever. I think that what it is I am looking for, is to identify the approach and the niche and what makes your approach to Knowledge Management at the school unique and to pursue and promote that. (223)

Subsequently, he/she exclaimed that maybe the leadership at C-1 was not as visionary as would have been desirable:

[C-1-5]: Nobody seems, in my view, to be quite clear on what it is. Is this a Technology Program? Is this a Business Aligned Program? I don't know that...you can have aspects of each, but my sense is right now that it's not drawing the interest that it could in terms of enrollment. (138)

The thought leader and another leader expressed that the focus may have been a bit too dispersed:

[C-1-1]: I think (...) one of the things where we may have gone off the rails a bit [was] (...) that we've tried to broaden the scope too much of what KM should mean to us as far as then wrapping it up as an academic discipline.

And I think what I would say to anyone else is take a hard look at KM from the point of view of the somewhat divergent views that exist within the community as a whole. Look at where you want to go with it and make a very clear decision about where you want to go with it and go with it and don't try and be all things to all people. (109)

[C-1-2]: We didn't (...) take advantage of what we had in order to be able to really, ourselves, keep track of how things were evolving (...) I couldn't tell you if it was written down anywhere, what the vision was for the program in the beginning, and how it changed and why it changed. (153)

The major challenge was the need to be able to explain KM and make it clear and accessible to the different stakeholders, including those within the university:

[C-1-2]: We couldn't build some of those networks because we weren't able to just really, in a simple straightforward way, explain what the value is and be able to demonstrate it internally. (...) There is definitely something to be said for walking the talk when it comes to KM.

And, we feel a little siloed at the same time that we're trying really hard not to be (...) building those intellectual networks within the university and then outside, or like to the outside, [and] (...) being able to keep some sort of track of them. I think is just really critical. (155)

In summary, at C-1 the participants benefited from a thought leader who, although inexperienced in KM, was experienced in the development of educational programs. He/she focused the Advisory Board and curriculum designers without 'straight jacketing' their activities. He/she fostered an environment where the development work occurred bottom-up; and those interested and committed would take accountability for its success. Although C-1-1 identified his/her own misgivings once the program design and development had been completed and the program was available to students, he/she realized that the dynamic between a technology-based view of KM and a business view of KM had not yet been reconciled.

KM Program Vision and Goals at C-2

The vision for the Graduate Certificate and the KM program at C-2 was to bring together two strong graduate schools, LIS and Business, where a unique combined degree could be jointly offered. The goal was to construct and offer a graduate degree that would satisfy the apparent demands for this kind of education in the current marketplace. The anticipated role for a student who graduated from the program was that of a knowledge officer or an individual who applied KM principles, tools, and techniques in a business environment.

There was no pretense that the program would turn out Chief Knowledge Officers (CKOs), and instead there was an overriding goal to educate change agents:

[C-2-5]: (...) people who would be capable of leading or being a change agent in a Knowledge Management program and recognizing the fact that many

companies don't call what they do Knowledge Management. There would be people versed in the discipline. (14)

Credentialing might have been an important goal when the program began because of the proximity of the MBA and MLIS. However, a number of participants felt that KM was not yet an accepted professional designation or that KM was not mature enough to stand on its own with an MS in KM:

[C-2-8]: The credential is not well respected enough to be accepted. It doesn't give you the same mileage as an MBA and it definitely doesn't give you the same mileage as a PhD. It's still considered somewhat of an academic field that hasn't broken into return on investment type consulting and, therefore, employers are not willing to pay top dollar for the credential. (40)

In summary, at C-2 the goals seemed clear during in the program's inception, but even with a clear goal and objectives, the lack of any well-founded market research about the potential audience seemed to make the goals hypothetical, at best, as the next subsection will illustrate.

5.3.17 Marketing, Branding, and Demand Advertising, Sales, and Customer Needs at C-1

The participants at C-1 voiced a concern about the need for a stronger sales and marketing effort at the program's inception. Additional sales and marketing activities could have included: advertising and promotion, more visible branding, commercialization, competitive analysis, customer and prospect tracking, customer behavioural analysis, market research planning, pricing analysis, product and sales strategy, and sales channel development. A stronger foundation for the purchase of the primary product—the KM degree—might have been created by greater investments in sales and marketing:

[C-1-3]: We are having difficulty, I think like a lot of other programs in this area, filling our programs, getting enough students, yet our web hits are huge. So we know we're being hit so hard on the web site and we have a lot of data that tracks web hits vs. enrollment across all the programs in the university and KM is the only anomaly, the rest track quite nicely between hits and enrollment (...).

[The] KM [website] is massively hit, [but shows] low enrollment. What that tells me is that there is another gap there. And I don't know what the nature of that gap is but that would be my single piece of advice to another institution going into this area and that's to figure out what that gap is. (233)

So, I think that would be my single piece of advice is to really (...) examine your target market, very, very carefully. Don't invent it in a vacuum from a serious discussion with your target market, because I'm pretty convinced that market is out there, but everybody is struggling to capture it. (239)

Numerous participants described the fast-paced dynamic associated with KM as an important feature that needed to be taken into account when planning a KM program, as well as the capability to be able to 'talk the walk...and walk the talk.'

[C-1-3]: I think there is a gap to what we're writing about Knowledge Management, what we're publishing about Knowledge Management, what we're educating about Knowledge Management and what somebody out there thinks it is, and thinks they want. And so we've missed something. I'm convinced that we've missed something and I don't know what it is. (235)

[C-1-4]: Having a track record as a pioneering institution is potentially important for a number of reasons. One is that the nature of the work that I am planning and developing in a program like this is classic, complex system work. Now it is really difficult to predict exactly where you are going to be in the future. It is really difficult to predict what the experts are going to be saying in six months. It is difficult to predict whether your faculty members will work out or still be with you in a given period of time.

You're working in a very dynamic environment and that's not necessarily typical of a lot of university environments and traditional disciplines in a university. Another reason is things move very quickly and if it takes you and your institution a lot of time to go through your comfortable decision making process or approved processes, you'll miss opportunities. And so you'd need to be able to pivot pretty quickly.

A third theory is...we are hearing, this is pretty anecdotal, but we're hearing perceptions that universities are not known for their internal Knowledge Management competencies, that sometimes universities equate publishing with knowledge sharing, that they can be quite competitive or isolated across their boundaries from faculty to faculty. And that if an institution doesn't practice Knowledge Management, why should they be trusted to teach Knowledge Management? (156)

In summary at C-1 the team felt that closer tracking of web interest vs. enrollment could have helped to better predict the target audience for market and sales, and subsequently impact enrollment. A consultant had been commissioned in 1999 to execute a market research study for the proposed KM program at C-1. However, only 63 interviews were conducted across the country to help identify the market for the program (from an off hand conversation after the interview with C-1-1). The study outlined a “very high” interest in a KM program, with almost one third feeling there was *definitely* a need, while slightly over one half of those contacted felt there was *probably* a need. Once the KM program offering was created, a discrepancy arose between the limited enrollment figures and the perceived demand, and this inconsistency was never followed up.

Additionally, the intrinsic nature of the speed in which KM was changing and morphing made it a challenge to create a message that would invite the correct audience into the program. Finally, the systemic nature of bureaucratic university program development may have worked against the KM program, both from the perspective of speed but also the perspective of ‘walking the talk.’

Advertising, Sales, and Customer Needs at C-2

Because of the *in situ* location of C-2 in a large metropolitan city, the institution was depending very much on word-of-mouth and limited advertising to market the program through numerous business sectors: pharmaceuticals, electronics, and consulting firms. At the same time there was concern expressed that the KM program was not getting the level of visibility a new, innovative, and specialized program really required:

[C-2-1]: Two issues that were heavily discussed by the committee (...) [First] is marketing (...). Secondly, how do you have the resourceful faculty to teach these specialized courses, for instance data warehousing, data mining, and competitive intelligence, etc, etc? (46)

[C-2-2]: But I mean it’s a huge area, it’s a huge economic engine and not having connections to that did not facilitate our being able to get [people] into the [program] who could make this actually drive forward in the corporate world. (...) I think in general, we’re (...) a small dot on the horizon. If we were [a much larger local university], we would have had more connections into that business world that we could have called up and said, “Look you know we’re thinking of

launching this program and we need to get into your company and do a few focus groups.” (86)

One of the critical concerns was the lack of market research as expressed in some of the following questions:

- What did the KM candidate students need in order to fulfill an appropriate organizational role?
- Where was the evidence of a market survey or market research?
- How do you prepare people to go into the field?
- Does the university have the staff or the support to go out and sample the marketplace to say whose going to hire our graduates?
- What will they do once they are hired?

This lack of market research meant there were constraints to determine if the market would accept an expensive degree program, especially one that would require many years of part-time work for someone working full-time to complete. There was a high degree of uncertainty for the consumer, given that the degree program and designation (MS in KM) were virtually unknown at that time in the marketplace. However, the team did call upon some alumni to suggest some answers:

[C-2-1]: What we did was we have a big list of alumni and others who show interest in [*LIS School*] and [*Business School*], (...). We send (...) out [announcements] saying there is an information session going on.

So then they come here, we talk about the program and hand out the brochures that we have prepared for various programs, certificate programs and masters programs, and that’s how we capture the new people marketing inside. (...) we advertise it in local newspapers as well as national papers (...). (54)

[C-2-6]: They brought back graduates who had been identified as being KM employees (...). I pressed us to do that again realizing my goal was how are you going to market it? Well, you are going to market it by having people that are out there doing it saying [*the University’s*] got it. (...) you are also sending a message to them: “This would be a good program for you to send your people to.” (22)

The challenge seemed to come down to lack of budget, lack of faculty resources, and an unknown market focus. The KM program was not going to make a market for C-1 given

the resources they had available, although the two schools were investing some goodwill. Only one authentic Knowledge Manager existed, in terms of (C-2-1).

In the KM area the market was diffuse and heterogeneous—not concentrated and homogenous—and this led to fragmentation, as may happen in any marketing program:

[C-2-5]: We asked about what is the target market because up until now our Knowledge Management certificate, although it was a joint certificate, was still primarily targeted at the information science professionals, who we would call the Librarians.

And it was our belief that Knowledge Management clearly extended beyond that from a number of us having had experience in industry saying we needed to manage intellectual capital in industry and what were the things we did and how those would be different from what the information science professionals would do.

So our question initially in the program was “Are you intending to provide a Master’s Degree for Librarians or are you interested in truly creating cheap knowledge officers or people who are experienced in the Knowledge Management practices?” And it was quickly resolved that, yes, we wanted a more generic degree (...) let’s say a more broadly focused degree rather than a specialty. (10)

A solid, market research plan could have strengthened the offering from C-2:

[C-2-6]: I knew what it was going to take to make a market and I didn’t think we ever did any solid marketing research. And even though I think we did a very good job of marketing the degree I don’t know what the ‘in moment’ and response has been recently (...) it didn’t meet its potential.

And that may have also been that we created a degree in the robust years of the IT hysteria and started marketing it and presenting it in the aftermath of an economic depression or recession I should say. So there’s a lot of external factors. (8)

In summary, at C-2 the need for a firm grasp of the audience through marketing and a visible branding program was apparent. Yet, the shoestring budget the program was given did not permit a strong marketing and sales campaign, not even the creation of focus groups to get some feedback on the program’s potential value.

5.3.18 Strengths and Weaknesses in KM Program Design

Strengths in the Program Design at C-1

Most of the participants felt they had created a reasonably strong program in the initial offerings. They felt they were satisfying the apparent workplace needs, individual needs, and business community needs. However, they also felt that there was certainly room for enrichment and improvement. The participants also mentioned that generally they felt they had done the best they could within the constraints imposed upon them. At least the institution was able to ‘put a stake in the ground’ and kick-off the program as quickly as the S/PEA could approve the program. There were concerns expressed about possible myopia in the initial offering of courses and the need to see KM from global, international, and public sector perspectives:

[C-1-2]: I think there has been a very conscientious, thoughtful, broad look at what elements are critical to a Knowledge Management program here at the University. If there is anything that we could have perhaps done better, although I know that we have actually really tried, is to make sure that the external view, what’s happening out there in the markets, where are our priorities for some of the leading organizations and some of our public sector organizations?

That feedback into [the KM program development] is probably something that we could have done a bit better. And the only reason I say that is because (...) what we’ve seen is that we really haven’t been able to engage, at least in terms of enrollment, interest in the program. And I can only speculate (...) people aren’t seeing whatever their Knowledge Management concerns are reflected in what we’re doing. (167)

A significant strength at C-1 was the programming flexibility and culture fostered by the University in terms of the ability to listen to learners’ needs and employers’ needs; a learner focus and organization focus; and the ability to handle contradictions between broad and narrow offerings.

Weaknesses in the Program Design at C-1

The major weakness was expressed in terms of an insufficient cohesion amongst the new faculty who delivered the courses. An estimated 95% of the faculty came from sources external to the University, meaning they did not work as a team or understand the school, culture, or values:

[C-1-3]: (...) I think, is that it [the program elements and the faculty] didn't hang well together. And I think the reason it didn't hang well together is that we hadn't built a strong enough faculty team. (125)

There also was a feeling that maybe the institution had been a bit ahead of the curve for the demand for a KM program, and this potentially held back its success in the short-term. The recently appointed Director of the KM Program suggested a number of areas for enrichment and improvement:

[C-1-4]: Well if we look at it in a course framework, for example, there are some courses that are working extremely well and there are some that aren't. Personally I think that we need to put a lot more thought into the technology side of the program and I mentioned earlier the Standards Course needs some rethinking.

The technology portions have probably suffered because I'm not an IT professional and I've really left it up to individual instructors to do, you know, almost all of the design and testing work and fine tuning in responsiveness. And I don't think that part of the program is cohesive yet and I don't think it's reflecting the overall framework very well yet.

I think we also need to continue to put more work into the relationships amongst courses because, as I alluded to earlier, particularly the distance instructors who are living long distances from each other and may never have met and haven't taken the program obviously just don't have that context to the degree they could. (91)

Many new areas would be under consideration for exploration in the future, such as tighter linkages between the courses, KM standards, KM tools and applications, the integration of IT and people, an understanding of how KM affects the public and non-profit sectors, business specialties, health care, innovation, the international area, knowledge creation, privacy, and rural economic development.

Strengths in the Program Design at C-2

The thought leader at C-2 was sincere and quite humble when he/she said that the success and quality of the KM program was due to the team commitment, and emphasized that it could not have been done without a significant investment of effort:

[C-2-1]: We put in a lot of time and energy and creativity into this and the initial [KM Certificate offering], must have spent enumerable hours from the exchange of e-mails and documents, answering questions and looking at the literature, looking at other programs. So we did a lot of that work, it took lots and lots of time and energy, and creativity. (58)

One of the significant strengths in the program was the collaborative capability for two professional graduate schools to work together on a joint program that resulted in a program much larger than could have been offered by each school. This shared program development along with the affiliation with a LIS School was a significant strength that positively affected the program:

[C-2-5]: I believe that to the extent that you can actually get schools to collaborate on a degree, it seemed to work for us. Now we may be a small exception to that rule. But if (...) [the KM program is] developed strictly in a [*Business School*], there are certain practices that the information science professionals have that most business schools don't have access to.

And comparably, and here's my bias, I believe that if you don't get a solid business foundation, that the best IS professional, and this being information science as opposed to information systems professional, will not be successful in the business environment in terms of actually managing that change process.

In some schools it might be a much bigger challenge than it was here. Either we are the exception or I was naïve early enough in my tenure here that I didn't notice the game playing that was going on that I didn't see. But honestly I don't think that it was that big a challenge. (90)

[C-2-6]: We were very pleased to realize the potential of an institution that had a long term [*Business School*] and even longer-term [*LIS School*] and an emerging and growing [*MIS*] program at the Graduate level. We thought that the partnership between the [*Business School*] with its ability to provide business in technology courses would strengthen what could be achieved with Knowledge Management, since people in Knowledge Management functions typically have come from all three of those professional fields. (6)

One of the decision-makers stressed the value of working within a relatively small institution that was not publicly funded. Such an environment could cut down on external decision-making and reviewers who may not understand clearly the emergence of this new field. As [C-2-2] said: "we have a fair amount of freedom to rise and fall on our own merit" (60).

Finally, a major strength of the program was the engagement of a large number of practitioners instead of academics in the program's design and the practical application of KM skills:

[C-2-6]: Because I am in [the] Business [School] I think I have a great advantage of knowing that the field is ahead of the academics. All of the best schools of business are scurrying to do what thanks be to God we've done. (...)

Knowledge Management took place in the world at large without anyone having a Knowledge Management degree. You need not get academics to design this. You need the insight of practitioners who can tell you where they have holes in their learning or needs in their skill development. (62)

[C-2-8]: (...) in addition to the curriculum choices that are offered, that it's very, very important that each class has an experiential piece to it where people can actually take the knowledge that they have acquired in the 10 or 12 weeks and then apply it to a case study format or some kind of contribution at a business to validate those concepts in a real world environment.

I felt that that would be the keystone in the success of the program, was actually being able to use these skills. And have coaching in a safe environment where you could use them and get feedback before you could actually went out and did it for a living. (99)

Weaknesses in the Program Design at C-2

Another decision-maker suggested a caveat about one of the current weaknesses of addressing the knowledge repository-centric approach at the expense of describing the return on investment necessary to justify an initiative:

[C-2-5]: [In KM] we tend to focus on information repositories, shadow partners, knowledge databases. You have to understand that somebody has to put them there, put that information there and then be willing to use it. And that evolves from the more political and cultural aspect which to me is common between KM and any other change management process.

I believe that it is at risk of becoming superfluous unless we show a return, because even in a non profit [organization, they] have to earn an economic return or else they just go out of business. (45)

Another critical weakness was the lack of administrative support for the thought leader. C-2-1 just didn't have enough bandwidth to carry out all of the activities necessary to

design while administering so many mundane activities. In fact, C-2-1 was, at the time, an untenured professor looking to publish and do research, so he/she had a very active schedule. Another major concern had been the lack of qualified teaching resources or the lack of an incentive for engaging qualified adjunct faculty:

[C-2-8]: For the core KM piece they really pulled down the courses that existed right now and then added a few for the analysis and design and the technical pieces of it.

The significant challenge in that discussion was there just weren't the resources to teach topics other than the proven, true, tried, and tested ones. There simply aren't enough KM practitioners or academicians in the [*regional*] land area that are willing to make that investment [i.e., take a salary cut to teach KM].

There are a few people out here, and one of them taught a Competitive Intelligence Class, but the compensation for coming to school 15 nights, it just doesn't work. And at the end of it the person basically said it was a great opportunity but I don't think we will be doing this again. (...) we didn't have the bandwidth or the resources to actually staff the teaching of it. (20–22)

An important concern was raised around the title and value of the degree—MS in KM. When contrasted with more widely acknowledge degrees, such as the MBA and MLIS, it was really an unknown. This was one of the reasons the initial MKM label was changed to MS in KM:

[C-2-8]: Really to get mileage in the KM profession you need a PhD in KM and then go back into top tier consulting at [*an established major consulting firm*] (...). Any of these really big firms that have a proven practice and will pay the dollars for the seven years you've invested to get a degree, a PhD.

A Masters simply doesn't have the recognition. (...) Most people perceive a graduate of a KM Masters as someone who just couldn't hack it in an MBA program, at least in business they do.

Because (...) if you are going to bother to get a KM Masters why the heck wouldn't you just go and get an MBA or get an MBA with an emphasis in OD or KM or whatever else is your area, but if you couldn't hack it there you're going to the Library Science School and getting a KM degree? (38)

I would not advise my child or my brother to spend \$30,000 to do this degree for whatever reasons people go into higher education. I really believe that if they have a passion for the field and they want to add to a new body of literature or

they want to learn from it, they are better served doing a PhD with the rigour and depth that it takes, or going off and doing a degree that really follows the discipline more deeply than a Masters in KM does. (54)

In summary, at C-2 the strengths outlined encompassed the:

- critical level of effort invested;
- cooperation of two professional graduate schools, especially the affiliation of a well known LIS School with the Business School;
- value of working within a small, private institution;
- anxiety around teaching only a repository-centric approach to KM;
- fear that insufficient coverage of return on investment could jeopardize the usefulness of KM;
- integrating academics and practitioners into the committee that designed the curriculum and courses; and
- teaching blend of academic and practitioner skills, with the emphasis upon the applied side of KM.

At C-1 the participants showed a great deal of pride in their accomplishments, given the elongated timeframe and frustrations endured trying to obtain S/PEA approval. The entrepreneurial climate of the University at C-1 and its inherent flexibility lent a lot to the initial achievements of the program in terms of enrollment and interest.

The major weakness articulated at both C-1 and C-2 included the:

- lack of resources to initiate the program,
- inability to engage a focus group to help discover and frame the needs,
- lack of qualified teaching faculty who were experienced in KM, and
- perception that the MKM degree might not be worth as much as a MBA or MLIS.

5.3.19 Gap Analysis of the Perception of KM

Gaps in the Perception of KM at C-1

Another new, important piece of knowledge derived from my study was a description of the gap in the understanding held by each participant about KM. The informants acquired a perception of the concept of KM when the program began. Subsequently, their

understanding of KM evolved after they had participated in the development and delivery of the KM program. The responses by the informants to the question asking them to describe the gap they experienced provided an incredible range of responses. Initially many respondents perceived KM as a technology-focused field, although there were misgivings:

[C-1-1]: I think at the outset, Knowledge Management to me had a very distinct technological bias to it. And I think that was largely out of my own opinions, not out of any predetermined research about the subject matter. In other words somebody came up to me one day and said, “Oh, we’re into Knowledge Management now.” And my immediate response was well that seems to be consistent with the general sort of technological underpinnings of the University. At which point someone said, “Well you’d better read this book in that case.” (99)

As the program evolved, each informant hardened their perceptions of what comprised this field called KM. Some respondents commented that their frame of understanding had changed and broadened to include a social science dimension. One informant described the change in his/her perception from a business perspective:

[C-1-6]: (...) So when we began this, we had a very naïve understanding I would say in some ways but so was the rest of the world. It was one that KM was going to enhance (...) profitability for corporations. It was going to be a way they would better utilize their resources. New way of thinking about utilizing some of the knowledge based resources in a knowledge-based economy, very topical, ready for the times.

It was about blending traditional forms of knowledge and it’s, I won’t say management, not the very best of words, utilization might be better. So it had roots that went back into library science, roots that went back into information technology, management services, databases, hardware, software. In the early going that was quite the big deal for quite a number of Knowledge Management users. (136)

Contrariwise, some of the informants actually claimed that their original conception of KM and their current understanding had not really changed:

[C-1-2]: I don’t know if I would describe it as having changed; the tool is still there but the standard line of tools being enablers for particular objectives. (...) I became a lot more interested in Knowledge Management and understanding that it is just a learning system. (151)

[C-1-4]: So I wouldn't say my perceptions of Knowledge Management have changed a lot. I am certainly better informed but my intuition was remarkably, frighteningly good. (...) my awareness of real world issues and challenges is really accentuated. (...) even more I'd say on the human and social side being the demand orientation, avoiding the huge knowledge repositories. (151)

[C-1-5]: I'm not sure I am less sure that I understand KM now than I was when this all began. [...] [It is] bigger and harder to get a handle on. I think perhaps it was a very simplistic view and my own exclusively that I had when this process began. Perhaps I was describing to myself something different to what sort of the emerging consensus around KM has come to be. (201–203)

Two participants highlighted important caveats that attested to the emergent nature of the field of KM and its ability to transform itself:

[C-1-4]: I'm far more aware now of the amount of time that appears to be wasted on people trying to figure out what KM is in organizations. And, it's a difficult one to answer. You just didn't get into these philosophical debates, or you didn't waste the time. (...) there wasn't the time to waste either. You just really needed to be doing the best you could and be productive in trying to learn from what you did.

So I'm certainly very conscience right now of the various levels of awareness, knowledge, experience, success, philosophies, (...) implications of the different ways the terms are being used and the costs of those things. (143)

[C-1-6]: (...) this is a field in explosive growth and, as a result, that growth means that your perceptions and understandings today will change when you look a little longer down the pipeline. We are normally, accustomed to growth in a scale of years, sometimes decades, so we've grown up within the mid part of the last century.

We're now looking at growth that is measured in months, maybe weeks. So what is happening in KM today is quite different than what was happening 6 months ago or 6 months before that. (...) So I think the perception of Knowledge Management is ebbing and flowing and shifting the balance point almost continuously.

It may be that Knowledge Management is one of these things that we will ultimately and maybe permanently understand poorly in the classical sense of breaking it down [into] its component pieces and assemble it together. It may not be something that can be assembled that way.

And Knowledge Management, I believe at its heart, is about complexity and that is what is making it very difficult to define what it is, what is the best program. (135–136)

Finally, one informant stressed the importance of an architecture (the conceptual framework), which became a strong foundation for the way the KM program was crafted at C-1:

[C-1-3]: I didn't previously understand the linkages between the segments of what you might call KM. And so I couldn't... my approach to KM initially was almost a smorgasbord approach. You take a little bit of that and a little bit of this and a little bit of that and you put it all on the plate and you've got KM.

And my understanding now is that you've got to first of all take the right pieces and you've got to put them together in an architecture that is linked and works. And I actually think that that is the hardest piece for anybody to get their heads around and it's by far the hardest piece for organizations to get their heads around. (227)

In summary, at C-1 KM was first perceived as a technology-based field. The exposure to KM extended significantly each participant's personal conceptual framework and added new dimensions to their understanding. One informant attributed the potential foundation of KM in complexity theory as a way to explain its continual qualities to change and be difficult to define.

Gaps in the Perception of KM at C-2

The thought leader at C-2 expressed the gap he/she experienced between his/her initial perception of KM and how it 'matured' during the evolution of the KM program in the following fashion:

[C-2-1]: When we started (...) my idea was also very limited at that time (...). To serve the organization internally, so that's what my focus was when I looked at Knowledge Management. And now, of course, it has expanded and we are going outside quite a bit in the area of Knowledge Management. (30–32)

The KM which we taught was a very simple field to start with. [It] has grown so much (...) and of course it is very dynamic in a sense, it's not like static. This is the Knowledge Management, these are the courses and this is what we cover. So (...) it's a very dynamic [field] and it accommodates new areas as they come up and more quickly than we thought. (133)

Many participants at C-2 almost suggested a banality to their 'before' and 'after' perceptions of KM. They felt that they had already been 'doing' KM and hadn't realized it. KM was common sense or just basic good management practice. However, "if that was the case," they exclaimed, "then why were so few enterprises doing a good job of managing their knowledge?"

Some informants initially had grave doubts there was actually a field called KM. They indicated that if a new field called KM was actually emerging, then most organizations would have to undergo significant changes both organizationally and culturally to incorporate KM into their enterprises. Others commented on: the dynamic of theory vs. practice that KM accentuates; the movement from tacit to explicit knowledge capture; or the dynamic of organizational design vs. organizational change. All of these are difficult to put one's head around.

In summary, at C-2 KM was (for some informants) an activity they had always been performing. For others, KM extended significantly their personal conceptual framework and added many new dimensions to what they had come to appreciate as KM. For both groups there would be no turning back; they were now passionately convinced that KM, as an emergent field, was here to stay.

Overall, this chapter has detailed the categorized data discovered during the grounded theory analysis. My goal was to present the facts and evidence about the phenomena that occurred at both institutions and some of the findings that resulted from the raw data. The next chapter will take this data and apply an interpretive framework to more fully address my research questions.

6 Discussion of the Findings

6.1 Organization of the Findings¹¹

My investigation examined the historical experiences of members of two institutions of higher education during the late 1990s. Members of these institutions concurrently tried to make sense of the emerging phenomenon called KM while designing KM educational programs. Members of the two institutions were similarly, but separately, engaged at about the same time in conceiving, designing, developing, and offering specific graduate-level KM educational programs. The teams proposed two distinct visions. The two program offerings for teaching KM and conveying KM skills to learners demonstrated a range of similarities and differences.

I collected data about the two institutions through semi-structured interviews and documents. These were organized as a case and analyzed with grounded theory method. The detailed analysis was supported by a software tool called QSR NVivo. The discussion of my findings in this chapter will frame the results of that investigation and pose answers to the overriding research questions that guided the study.

As previously described in Chapter 4, case study analysis is a rather broad approach to studying a phenomenon. Cases can be expressed and studied quantitatively or qualitatively. The value in quantitative case studies is the statistical generalizations that may be used to prove or disprove an hypotheses or theory; the value depends primarily upon the size and variation within the sample. On the other hand, qualitative case studies do not rely on sampling units, per se, since they are often rich descriptions of one, two, or several cases. The potential value in qualitative case studies does not rest in statistical generalizations. Qualitative case studies “rely on analytical generalization. In analytical generalization, the investigator is striving to generalize a particular set of results to some broader theory” (Yin 1994, p. 36).

¹¹ The raw data of the study yields evidence that can be interpreted within the CKC conceptual framework. The data and evidence can be summarized to produce additional information about the study. When interpreted, the data, information, and evidence yields the findings. The findings were used to answer the research questions. Conclusions and implications for future research were derived from the findings.

Qualitative case study analysis is often combined with other special analytical methods to help make sense of the resulting data, for example, document analysis, grounded theory, narrative analysis, process analysis, or text analysis. My investigation applied grounded theory analysis as a method to discover the underlying causes, effects, influences, and processes associated with the phenomenon of the study. I combined Yin's (1994) *exploratory* and *explanatory* case study approaches. I engaged in an *exploratory* case study approach in order to investigate an unexplored territory and establish familiarity and a deeper understanding with a new subject (the historical sensemaking processes during the architecture of KM educational programs).

I used an *explanatory* case study approach in order to study the behaviour of the program designers, both individually and as a group. The purpose of these case studies was to help me answer the proposed research questions. Studying more than one case permitted me to understand the phenomenon taking place from the perspective of two institutional contexts with many actors (social participants), and to propose theory that may prove useful for future KM programs. Carrying out a cross-case comparison also permitted me to compare the findings and suggest conclusions that may go beyond the single case (Eisenhardt, 1989).

I first discuss the abstracted findings in terms of the conceptual framework used to guide the study. Then I organize my findings around Choo's Knowing Cycle (CKC) framework (previously presented in Chapter 3) and my research questions. Table 6-1 matches the research questions to Choo's information processes that possess the closest affinity. Question S.4 is an *Ad hoc* question unconnected to the CKC, but important from the perspective of my LIS doctoral program. I weave relevant evidence from the previous chapter with a review of pertinent literature. Finally, I summarize my findings about the KM programs investigated.

As mentioned earlier, the CKC conceptual framework was an interpretive device for discussing the findings. As any researcher might anticipate, the processes of

sensemaking, knowledge creation, and decision-making did not take place in an experimental vacuum. The environment was messy, and therefore the information processes of the CKC interpenetrate each other. Knowledge creation and decision-making were going on simultaneously within the sensemaking activities. Decision-making was normally triggered by the availability of new knowledge after sensemaking had taken place. However, while actors were trying to make sense of something, they were also making decisions at a micro-, meso-, and macro-level. The placement of specific findings in the following sections reflects my interpretive priority setting. I have made an informed choice in order to describe certain evidence, facts, or observations within a particular subset of the CKC conceptual framework.

CKC Information Processes	Ques. #	Research Question
Sensemaking	P.1	How did the academic KM program designers make sense of the emerging field of KM in order to create a program for conveying learning about this phenomenon called “knowledge management”?
Knowledge creation	S.1	What new knowledge may have been created about KM through the program conception, design, and development processes?
	S.2	What general learning outcomes were proposed in the KM programs under study to convey learning about KM?
Decision-making	S.3	How has the new knowledge created about KM contributed to the decision-making process for new program development?
<i>Ad Hoc</i> Question	S.4	How can librarians and information professionals position their educational programs to appropriately include this emerging field of KM?

Table 6-1: CKC Information Processes Matched to Specific Research Questions

6.2 Strengths and Weaknesses of CKC Conceptual Framework

When my work began I needed a conceptual framework for interpreting the data. I choose a framework that stressed the syncretic relationship of the information processes I was investigating—sensemaking, knowledge creation, and decision-making. The choice of CKC furnished a model for perceiving the construction of a KM educational program. A model that fused sensemaking, knowledge creation, and decision-making into a framework for interpreting the individual and group construction of reality exhibited a

strong and a weak element. CKC presented a strong, comprehensive and holistic model of three information processes. These intrinsic architectural processes were used to discover the underlying information, relationships, and courses of action. This strength was also CKC's greatest weakness.

The most critical weakness in applying CKC was the broad range of possible input sources, processes, and implied sub-processes. CKC appeared to presume that organizations automatically documented and logged their actions, communications, decisions, document artifacts (correspondence, databases, drafts, emails, notes, working papers, policies, etc.), priorities, and processes. Few individuals and groups have the interest or privilege of time to keep meticulous records of thought processes, decisions, and actions, unless an organization was regulated by strict and severe legislation, or an organization was driven by a culture of extreme rigour and discipline. The best a researcher could anticipate in such a circumstance would be a smattering of documents and imprecise recollections—imperfect as they may be—of important historical events and actions.

For example, email appeared to be the most ephemeral object to try to collect in order to build an audit trail preserving decision-making results. The documents I received from all the informants in both sites yielded less than five emails in total. Yet, email systems were mentioned by almost every informant as the integral information delivery and collaboration mechanism throughout the KM program development processes. This same problem is currently reflected in business and government environments today, where the loss of emails has exposed the 'soft underbelly' of organizations and the widespread appearance of a form of corporate amnesia. Only a very small percentage of academic institutions, businesses, and governments manage their email as an asset and preserve the objects for use as audit trails of decisions and historical specimens of important business transactions.

If not explicitly documented, decision-making processes and results were challenging for informants to recollect in detail with a high level of confidence. Informants would

remember that specific decisions had been made, but there may have been a vague recollection of how the decision was identified, who the decision-maker was, what courses of action were discussed and taken, or what elements of timing were involved in a decision. By inference, poor recollection could be a result of the myriad of activities taking place between the programs inception and the initiation of my study, along with the lack of supporting documentation. Often, decisions appeared to just ‘happen.’ Thus, an important weakness of CKC is its inherent reliance upon a reliable audit trail, either *implicit* (through individual memory) or *explicit* (through an organizational memory in the form of a repository).

Knowledge creation, on the other hand, was a bit easier to track than decision-making because of the documents that preserved the new knowledge created by the informants. Intuitively, many individuals kept copies of important documents for future use and recollection of policy and decisions. Moreover, during the interviews the informants appeared to more easily recollect bits of knowledge about the KM program when they referenced documentation. Although many documents did not reflect the current version, the available version at least helped to frame some of the thinking that occurred during stages of the program’s development.

Regardless, final versions of some documents were unavailable to me. This could be attributed to the ‘free form’ permitted in academic institutions where highly organized personal and corporate filing repositories are difficult to impose on faculty members. Indeed, neither of the sites required the faculty members or staff to deposit all their files in a central repository when the project had been completed. I was fortunate enough to gain access to the rich material I received although almost half of the material collected was designated as *Proprietary*. I could only reference some of this material in a generic fashion due to the request by the site authorities for confidentiality and anonymity. Thus, CKC could not be fully exploited in framing the sensemaking experiences, new knowledge, and decision-making that occurred at each site, but there was still sufficient volume of documentation for me to carry on the investigation.

An exhaustive review and critique of CKC is beyond the scope of this investigation. A potential weakness has been highlighted above. Regardless of this shortcoming, CKC provided a stable and useful foundation to frame the data collected and support its further analysis. The interpretation of the data in the following sections relies heavily upon my understanding of the CKC's structure and internal processes.

In the next part of this chapter I discuss my findings under CKC's three information processes—sensemaking, knowledge creation, and decision-making. The reporting of evidence in terms of facts, observations, and interpretations is not exclusive to one of the CKC information processes. The evidence could be reported within one or more of CKC's three information processes and under multiple research questions. There is occasional repetition for the sake of completeness, emphasis, and consistency in responding to questions. Finally, I will summarize responses to the research questions that apply within these three information process at the end of this chapter.

6.3 Sensemaking Information Processes

It is a rare moment in history when an individual or members of an institution personally become aware that they are participating in the sensemaking experience of defining and delineating a new field. Examples abound for such emerging fields during the last five to six decades: artificial intelligence, astrobiology, CIS, entrepreneurialship, gender studies, (including gay and women's studies), nanotechnology, MIS, nuclear physics, operations research, and space science. Established disciplines and fields often seem concretely ensconced in their traditions, such as biology, economics, education, chemistry, English literature, geology, history, mathematics, philosophy, physics, social science, and theology, to name but a few. These disciplines and fields generally experience only incremental change, not revolutionary transformation. In my two cases the teams were not dealing with an established discipline (Allix, 2003; Swan, Scarborough, & Robertson, 2002). The institutional members were immediately challenged by the need to construct meaning about an emerging field.

6.3.1 Primary Research Question—P.1, Part 1

How did the academic KM program designers make sense of the emerging field of KM (...)?

I will begin with the first part of the primary research question: *How did the academic KM program designers make sense of the emerging field of KM?* The second part of the question will be addressed a bit later in this section. In order to answer the question I first need to summarize the sensemaking experiences at the sites. The four interlocking processes outlined by Weick (1979)—*ecological change, enactment, selection, and retention*—will be described within CKC sensemaking process at each site:

During sense making, the principal information process is the interpretation of news and messages about the environment. Members must choose what information is significant and should be attended to. They form possible explanations from past experience, and they exchange and negotiate their views in order to arrive at a common interpretation. (Choo, 1998, p.3)

Sensemaking Process at C-1

Ecological Change Processes

At C-1 an *ecological change* took place in terms of converging trigger events and situations:

- the legacy of the dot-com philosophy: anything associated with IT would be successful;
- the goal of gaining a competitive advantage for a new institution;
- the need to introduce profitable revenue streams; and
- the chance encounter between the Chief Librarian and the Senior Program Development Officer over a very new topic—KM.

The *ecological change* stimulated both a business interest as well as an intellectual curiosity.

Enactment Processes

The resulting *ecological change* triggered the next process described in Weick's model, *enactment*. At C-1 a detailed literature search was launched by the Chief Librarian to obtain more information about this new field. Additional information was sought from colleagues external to the University. The thought leader began to grapple with the

significance that this new field could make for the organization's growth, visibility, and reputation. An incomplete sketch was compiled by the Dean, Senior Development Officer, and Chief Librarian; the result was deemed sufficient enough to discuss the topic with the University's President and obtain preliminary approval to proceed. Focus groups were launched. A small market survey was launched by the Senior Development Officer to try to ascertain the potential interest in this type of degree. The Dean located an upcoming conference where the theme was KM and many well known practitioners would be attending.

The participating informants responded to the equivocal information about KM by bracketing a portion of the information available about the domain of KM and examining this material in more detail. The participants *enacted* the environment and were adapting to the emerging domain of KM through numerous information-gathering activities they performed. The implicit goal was to learn enough about KM to construct a vocabulary about the field that could be the basis for a formal proposal. Regretfully, the breadth of the field they discovered only yielded higher volumes of equivocal material about the ephemeral boundaries associated with KM. There existed no agreement upon a collective vocabulary to describe KM (Binney, 2001; Dalkir, 2005). A definitive BOK did not appear to be outlined or endorsed by practitioners or other academics (Jennex, Croasdell, Olfman, & Morrisson, 2005). Multiple, contradictory definitions for KM abounded in the marketplace and academic literature (Earl & Scott, 2000; DiMattia & Oder, 1997; Prichard, 1999). There were conflicting answers to the question of: Where does KM belong: Arts, Sciences, or a professional degree standing on its own? (Loshin, 2001; Stankosky, 2005b). The participants *enacted* their environment in order to try to create order out of the randomness they initially encountered surrounding KM.

Site C-1 embarked upon a concerted bottom-up approach to try to make sense of KM in terms of the existing knowledge and experiences of the informants and others outside the University considered more informed. A critical component for informing the thought leader at C-1 was the KM conference he/she attended. Studies have suggested that conferences and scientific meetings were a powerful mechanism for establishing contacts

and accessing current research underway (Glänzel, Schlemmer & Schubert, 2005; Söderqvist & Silverstein, 1994). A select number of the attendees encountered at the conference were later invited to become members of the Advisory Board. An increasing number of informants and external Advisory Board members were brought into the *enactment* activities to construct a mosaic of the vocabulary, concepts, and elements comprising the KM field. Some of the faculty consulted within the University dissented and did not believe KM was an authentic field or discipline. An initial proposal was submitted to the S/PEA and was rejected out-of-hand because it lacked a solid conceptual framework and curriculum.

A number of informants commented that a clearer vision and goals for the program would also have had many advantages. Confusion initially reigned about the relationship between IT and KM, and in fact there were some who suggested KM could be enabled by IT, but that IT was not necessary for KM to actually occur. A number of KM authors supported the belief that KM and IT were intimately related, and that KM influenced IT instead of IT influencing KM (Cloete & Snyman, 2003; Kim, 2001; Woods, 2004, January).

A lack of focus was demonstrated in the proposal submission process where the original program was envisioned as a MS or MSc degree. It was subsequently resubmitted as a MKM degree, and it was finally proposed as a MA in KM degree and a MBA degree with a KM concentration. The synergy between the Business and Science programs had not been exploited early enough for the initial proposal. Informants agreed that greater focus and better priority setting should have occurred earlier for identifying the program framework, elements, and partners.

In order to bracket the different sub-domains of KM that might comprise a program the participants identified widely read and respected texts, their authors, and highly visible KM practitioners. Members of the Advisory Board suggested their own reading lists and books, or recommended other books they personally favoured. The KM conference became a source for texts, authors, and practitioners. Since no central recognized

authority existed that could be consulted on the texts for KM, a few other KM program descriptions were consulted online. However, rich information about other university KM courses, their content, and bibliographies were limited due to the competitive nature of the programs.

Selection Processes

The *enactment* process could not be finalized before the *selection* process began. The *selection* process tried to answer the question: “What was going on here?” (Weick, 1979, p. 175). During *selection* the participants attempted to reduce the equivocality of the *enacted* data. Participants experimented with interpretive templates from previous encounters with curriculum design and development in an attempt to explain cause–effect relationships. The *selection* process was the foundation for participant interpretation of the scrutinized topics and subjects.

A number of events led to multiple submissions of the program proposal: a lack of definitions, an identifiable BOK, and requisite experience with the processes encompassing the program approval process within the S/PEA. The participants underestimated the rigour and detailed content required by the S/PEA for the proposal. Surprisingly, the intrinsic passion that many of the informants developed while working upon the program’s inception provided the motivation to continue the process in the face of potentially demoralizing rejections.

The collaborative approach of learning from the ground-up appeared to take an inordinate amount of time and effort before tangible results appeared. This was most evident in the multiple cycles of proposals and rejections between the University and the S/PEA. The thought leader at C-1 commented as an afterthought that if C-1 had been able to approach and interest one of the major thought leaders in KM to lead the design and development effort, the University would have been able to make much faster headway in developing and offering the program. Nonetheless, the group began to formulate a unique and useful conceptual framework to market and promote the program to the S/PEA, and to eventually market and sell it to interested learners.

Although this framework was considered neither complete nor exhaustive, it was believed to be comprehensive enough to support the submission activity of the S/PEA. By placing KM within the context of other established fields, the team minimized the ambiguity surrounding KM and asserted it was a solid field worth the investment to create an educational program offering. All the effort was not wasted or lost, but the program approval process external to the University inhibited quick curriculum development, course design, and offering of the program.

Members of C-1 progressively agreed to definitions that evolved over the course of the proposal submission process. The first was the early, humble beginning with the Malhorta (1998) definition that vaguely described: discontinuous change; organizational processes combining data, information, and IT; and human creativity and innovation. Then there was a description of multidisciplinary leadership and management abilities encompassing organizational behaviour (OB), IT, human resources strategies, and effective communication. Next, there arose extracts from previously published definitions that had been proposed by public sector organizations. These definitions spoke of: collective expertise; customer goodwill; databases and systems; intellectual property; knowledge life cycle activities; and relationships and social networks. Finally, the definition published internally in a working paper stressed: organizational strategy; social, economic, and ecological exchanges; and the integration of knowledge possessed by community members.

Throughout this process of constructing sense out of definitions, the Advisory Board was described as the critical success factor in harmonizing and finalizing an acceptable definition. Regardless of the lively dialogue that took place around this subject, at one point the thought leader at C-1 “drove a stake into the ground” and declared that the current version of a definition for KM was sufficient to carry on the bulk of the design and development work. The leadership of the Dean and Senior Program Development Officer ensured that the lack of knowledge about KM did not inhibit the program’s inception. Perseverance and pragmatic experience directed an enthusiastic and passionate group of participants.

Some informants, because of their exposure to complexity and chaos theory, were actually quite comfortable with any contradictions that crept into the proposal. The participants at C-1 *satisfied* the definition and ‘got on with the work’ despite outstanding ambiguity and uncertainty associated with KM. There was an internal acceptance that KM was different from any of the major educational disciplines and domains they had previously experienced. The implicit agreement that arose amongst the informants was that KM was either multidisciplinary or interdisciplinary.

Retention Processes

The products resulting from a successful sensemaking process needed to be preserved by participants for use in the future—referring to Weick’s *retention* process. Conceptual frameworks, curricula versions, proposals, program evaluations, syllabi, and working papers emerged from the concurrent *enactment* and *selection* processes as candidate information objects for *retention*. Although a lot of correspondence and email were never retained or were misfiled, versions of seminal documents did survive for me to review as part of this study. The institution stabilized its interpretation of the continually shifting field of KM by implicitly saving documentation about the program. Based upon this resulting evidence presented in the submission and approval documents, the Dean was authorized to hire a Program Director and faculty who were empowered to offer and deliver courses to registered learners.

Of course, further extension of the original offering would become necessary, along with additional refinements, both of which would need to refer to the retained organizational memory. The overriding feeling was that the KM field would continue to morph and search for a self-identity for some time to come. Regardless of this feeling, the goal was to still create and offer a degree in KM. The University could at least offer a “flavour” of KM that would suit certain learners whose goals matched those of the curriculum designers.

Sensemaking Process at C-2

Ecological Change Processes

At C-2 the *ecological change* that took place was almost solely based upon the timely recruitment of an instructor who displayed exemplary skills in LIS but also happened to be one of the leading experts in KM. His/her knowledge of KM and his/her personal passion for the emerging field stimulated the business interest as well as an intellectual curiosity within others at the institution. This passion and leadership combination has been described by others as a critical success factor for championing KM and KM-related initiatives (Bennet, 2005; Sallis & Jones, 2002).

Enactment Processes

The thought leader *enacted* the environment through an incremental top-down approach where the elements of KM were drawn primarily from his/her repertory of material and augmented through a collaborative curriculum design process with the participants. The thought leader was passionate about KM. He/she offered an introductory KM course and other internal seminars to build a foundational vocabulary that helped candidate participants understand the many facets to KM. The thought leader *enacted* a knowledge sharing experience by communicating and revealing his/her knowledge about KM to anyone interested in the KM subject matter. The thought leader tacitly established a Community-of-Interest (COI) that evolved into a Community-of-Practice (COP) and eventually a Learning Organization.

The community building techniques of both thought leaders mirrored the characteristics described by many of the COP pundits (Saint-Onge & Armstrong, 2004; Wenger, 1998).

These characteristics encompassed (Saint-Onge & Wallace, 2003, p. 26–37):

- *common purpose*—cross functional community with common goals and objectives;
- *membership*—selection criteria for invited members;
- *sponsorship*—endorsed and supported by senior management;
- *mandate*—defined and endorsed by the champion and the members;
- *evolution*—organically evolving as the goals and objectives change;
- *main outcomes*—institutional alignment, integrated solutions, responding to perceived market needs;

- *accountability*—accountable to a specific individual at the University
- *organizational support*—support from across the organization and supplying appropriate data into budgeting and business plans of the organization;
- *infrastructure*—formal and informal communication and retention of document artifacts; and
- *visibility*—visible within and outside of the organization.

The evolving communities were the foundation for completing and offering the programs, although these communities were not formally labeled as COIs or COPs.

The thought leader presented the participants with an existing conceptual framework for KM based upon two widely accepted pundits in the field: Davenport and Prusak's (1998) *Working Knowledge: How Organizations Manage What They Know*. The framework was used as the basis for further informing the participants and creating a sense of order to what otherwise may have seemed to be a very broad and unstructured collection of KM sub-fields. The thought leader *enacted* a definitive BOK based upon his/her previous research. Multiple, contradictory definitions for KM encountered by some participants were harmonized into those proposed by the thought leader. A definition for KM was put forward that encompassed a systematic life-cycle of activities associated with intellectual assets, expertise, and work experience and the positive effect that KM could have upon organizational participation, performance, and effectiveness.

Uncertainty did exist around the potential target audience for the degree offering and the KM roles in the workplace that might be available for graduates. No budget existed for a market research study, so the team knew they were 'flying blind.' Unlike the situation at C-1, minimal anxiety was associated with the MS or MSc in KM designation. The belief was that the unique Master's degree would become a recognized credential and as accepted in the workplace as the MA, MBA, MLIS, and MS or MSc. Informants at C-2 knew they were leaders in the development of a new degree that was unrecognized at that time. All of the informants admitted that KM was different from any other educational field or discipline they had encountered. A useful, but not critical component for informing the thought leader was the KM conference attended. He/she tested the idea of a MS or MSc in KM degree with candidate audiences at the conference. Interestingly, none

of the attendees encountered at the KM conference by the thought leader at C-2 were invited to become members of the Advisory Board.

Selection Processes

The *enactment* process overlapped the *selection* process. During *selection* the participants reduced the equivocality of the *enacted* data by placing their trust and confidence in the experienced KM academic/practitioner. Because of the combined practitioner experience and academic background of the thought leader, KM could be authoritatively related to members of his/her audience in terms of LIS School topics, Business School topics, and Computer and Information Systems topics. Although participants at C-2 experienced the equivocal nature of information about KM during the data-gathering activities, the participants appeared to easily bracket the domain comprising KM. Again, like at C-1, a few of the individuals within the University dissented and believed KM was a fad that would disappear. These differences were in the minority and were overcome.

Interestingly, both thought leaders referred to Davenport and Prusak's seminal work as a cornerstone for promoting an understanding of KM.

A proposal was developed and submitted by the Program Development Committee to the Curriculum Review Committee (CRC) in a process that was substantially more transparent and efficient than the S/PEA process at C-1. The content was accepted and approved with little questioning because: the CRC had been personally briefed, KM had been defined within an accepted framework, a BOK had been identified, and many of the proposed courses were incremental extensions of existing courses.

The CRC did not feel the university had much to lose if a trial offering in terms of an initial certificate was used to determine the potential demand. This vision extended to the Master's degree. Professionals who 'did KM' in an enterprise and were involved with change management became the anticipated learner audience. However, the KM Centre/Center was informed that the funding model would come from existing faculty lines. The senior decision-makers were understandably risk averse and could not invest new funding until the program's profitability until it was proven in the certificate.

Within a year of the initial courses and seminars being offered by the thought leader, the KM Centre/Center was established. It was located under the LIS umbrella and was founded with minimal effort and no resistance. This entity became the point of focus for initially offering a KM Certificate and the eventual base for offering a Master's program in KM. From the very beginning the vision of the Graduate Certificate was to build a foundation for offering a degree endorsed jointly by the LIS School and Business School.

The thought leader set the priority for constructing an Advisory Board with support and direction of the Deans. The board was composed of alumni, local and regional academics, and practitioners who were closely aligned with the goals of the privately-funded institution. The goals and objectives for an Advisory Board were very similar to many other *Terms of Reference*. For example, the description of the York College Industrial Curriculum Advisory Board (2005) in Pennsylvania was indicative of the terms of reference at C-2:

An outgrowth of the IAC [Industry Advisory Council] has been the establishment of a small working group of engineers and engineering managers—active in their fields—who advise the Program Coordinator and help maintain a relevant focus for the engineering program at York College. This group is designated as the Industrial Curriculum Advisory Board (ICAB) and has, as its primary tasks, the responsibility to (i) provide input in carrying out the mission, goals, and objectives of the York College engineering program, (ii) provide input related to curriculum structure, course content, and classroom and laboratory needs for the purpose of maintaining program relevancy and focus, (iii) assist in determining appropriate outcomes (and their measures) required to achieve program objectives, (iv) help assess program outcomes from an industrial point of view and assist with the use of these assessments in the continuous improvement of the program, (v) as needs arise, assume a proactive role in proposing new engineering programs—as well as alternatives to existing ones—for the purpose of both improving and expanding the base of engineering and engineering education in the York region. (York's Partnership With Industry, ¶ 3)

The informants reported that their passion for this new field increased substantially during the program development and course design activities. The informants began to discern numerous opportunities where KM tools, techniques, methods, and theories might be applied in the workplace. Everyone exhibited commitment and sincere passion during the interviews—from former students to the Provost.

Retention Processes

C-2 approached the *retention* process similarly to C-1. Conceptual frameworks, course syllabi, curricula documents, proposals, and working papers were the solid results of the *enactment* and *selection* processes, and were retained in a semi-organized fashion. Most of the correspondence and emails were lost, misfiled, accidentally deleted, or confidential in nature; but specific copies of some vital documents were retained for my review as part of the investigation. The institution had retained a stable perspective of KM at the time they conceived and designed the program with sufficient documentation for future review and program assessment.

All informants agreed that the emerging field would continue to morph and would not likely become a stable field in the near future. This instability in the KM field has been confirmed by many others (Den Hertog & Huizenga, 2000; Dixon, 2000). The institution's goal evolved to be one of the first to offer a MS or MSc degree in KM and continue to refine it over a longer period of time. Some of the informants had concluded that the emerging KM field was crossdisciplinary or multidisciplinary. The informants believed they had been able to make sense of KM and architect a useful and valuable draft release of a KM program. They also realized that the program would need to be refined and extended over time. Other programs where KM was combined with the LIS School, such as at the University of Oklahoma and Nanyang Technological University (Al-Hawamdeh, 2005), responded to this same challenge and began with a core program that later was extended to more electives as resources and revenue became more readily available.

The University adopted a "flavour" of KM that depended upon the insight inculcated by the faculty who extended their courses by incorporating KM material and who eventually taught the revised courses. Al-Hawamdeh (2005) had commented that:

The biggest challenge in designing a knowledge management program is to create a balance between the various disciplines that will make up the program. In most cases, people tend to be biased toward their own discipline, and thus put more

emphasis on areas relevant to them...The same can be said about communications, information science, management, and business. (p. 1206)

The thought leader wanted to expand the faculty by hiring experienced faculty who were well-regarded practitioners. However, this did not materialize because the salary that could be offered in an academic institution was insufficient for highly paid experts whose skills were very much in demand.

Contrasting and Comparing C-1 to C-2

I will now return to the question: *How did the academic KM program designers make sense of the emerging field of KM?* Each site approached the sensemaking process differently. Appendix G groups the important thought leadership tasks and activities carried out during the conception, design, and development stages by the team leaders to help themselves and their teams to make sense of KM.

Important Thought Leadership Tasks and Activities in Both Cases

From the important thought leadership tasks and activities documented in Appendix G, Table G-1 we can derive a number of findings about both cases. The KM conferences provided the thought leaders with differing degrees of inspiration to the *enactment* and *selection* processes. The background and experience amassed by the team members demonstrated that KM program design and development encompassed more than one field or discipline. Competency and skills matrices helped align proposed learning outcomes. The role of passion as a personal quality of the KM program thought leaders stood out prominently. Certificate and diploma programs were considered a potential source of candidates for the Master's programs. The open-ended morphing and evolution of the emerging field of KM was supported by the continuous improvement programs.

Important Thought Leadership Tasks and Activities at C-1

From the important thought leadership tasks and activities at C-1 documented in Appendix G, Table G-2, we can derive a number of additional facts about C-1. The thought leader executed a number of activities intrinsic to the institutional approach and culture. Market research and program evaluations assisted the thought leader to gather

additional information about the boundaries of KM. Definitions and candidate material for the BOK were compiled and synthesized from a number of internal and external sources in order to architect the framework and feed information to the design sessions.

The conceptual framework was created as an original and unique method for situating the KM specifically within the surrounding academic programs at C-1. The team established a graduate diploma, a MA in KM, and a MBA degree with a KM concentration.

Flexibility, agility, passion, and perseverance were required in order to successfully achieve S/PEA approval. The bottom-up approach was successful in building a unique KM program, but it was expensive in terms of elapsed time and effort.

Important Thought Leadership Tasks and Activities at C-2

Now let's review what happened at C-2. From the important thought leadership tasks and activities at C-2 documented in Appendix G, Table G-3, we can derive a number of facts about C-2. The thought leader executed specific activities fundamental to its institutional approach and culture. Previously acquired expertise in KM permitted the thought leader to quickly build awareness, confidence, interest, and trust for the topics comprising KM by offering courses and seminars. The establishment of a KM Centre/Center created a point of focus for course refinement and an initial certificate offering. The thought leader's background, experience, previous research, and publications immediately furnished ready-made and authoritative definitions, a BOK, and a conceptual framework.

A quiet collaborative style combined with an expansive knowledge of the multidisciplinary nature of KM predicated a shared program between two normally competitive schools at the University. A top-down approach quickly built the initial KM program offering that relied upon extending existing courses and developing a few new courses to minimize the investment. The team established a certificate and a MS or MSc in KM. As the expert and academic, the thought leader was quickly invited into the lead role for the KM program at the university.

From these overall findings about the two thought leaders I proposed a checklist of ideal actions (see in Appendix G, Tables G-4, G-5, and G-6). A thought leader developing a KM program could be expected to execute a number of personal, team-oriented, and organizational actions.

Important Team Member Tasks and Activities in Both Cases

From the important team member tasks and activities documented in Appendix H, Table H-1 we can derive a number of facts about both cases. Both institutions incorporated previous program and curriculum design experience into the process for constructing the KM program. An unabated passion to carry on was stimulated by each leader's personality, expertise, and people skills. The participants became members of a learning organization and embraced dialogue and self-learning as methods to help make sense of KM. The design and development efforts were successful in raising visibility and reputation for both institutions. The specific KM program elements (courses) were attributable to the background, experience, and knowledge of the participating designers.

At C-1 there was one important team task and activity that only occurred at that institution: *The participants coupled their institutional experience in leadership and ecology with the vast experience in KM represented by invited practitioners who became members of the Advisory Board.* At C-2 there was also only one important team task and activity that was singular to that institution: *The participants worked together as key members of the LIS School, Business School, and Computer and Information Systems faculty to establish a shared program.* These were two activities that differentiated the programs and affected the flavours of the separate KM programs.

From these overall findings about the team members I proposed a checklist of ideal actions (see in Appendix H, Table H-2). A member of the community involved in developing a KM program could be expected to execute a number of actions.

Summary of Thought Leader and Team Member Tasks and Activities

In summary, neither cases were ‘brought to a screeching halt’ by the lack of information about KM, nor were the two cases constrained by the ambiguous and uncertain nature of the new, emergent field of KM. In fact, with C-1 there was an explicit acceptance of this constraint and the participants actually acquired knowledge of and embraced other emergent theories that promoted ambiguity and uncertainty. At both institutions the emergence of a visionary thought leader provided a stabilizing influence on the teams. In her study, Bennet (2005) described the overriding passion exhibited by thought leaders involved in KM—more the rule than the exception in their personal qualities. At C-1 the team members were motivated to develop their own expertise in the area of KM, while at C-2 members deferred to the ‘expert’ where boundaries, definitions, and frameworks were clearly articulated.

Both cases illustrated the value of self-learning as a method to construct organizational learning and quickly raise the collective knowledge of the group about the new field of KM, while diminishing the anxiety associated with ambiguity and uncertainty. The two institutions had implicitly established learning organizations. Peter Senge (1990) in the *Fifth Discipline* was one of the first to describe the purpose of a Learning Organization as a place:

in which creative and innovative thinking is facilitated and encouraged, where people continually expand their capacity to create the results they truly desire, where new and expansive thinking patterns are nurtured, where collective aspirations are set free, and where people are continually learning to learn together. (p. 3)

A simple cursory review of the two institutions in light of these characteristics would suggest that they became *Learning Organizations*. The two thought leaders had expended a lot of effort in building *Learning Organizations* within their institutions, and the resulting KM programs demonstrated the benefits of the COIs and COPs that evolved into vibrant learning communities.

The presence of strong thought leaders at both institutions facilitated the sensemaking processes for each respective team. They fostered environments of collegial consensus to

harmonize the development work. However, even without total consensus, the imperfect understandings and unfinished definitions still permitted the teams to progress. The leaders directed the teams past situations that presented obstacles, such as the litany of disapprovals by the S/PEA at C-1, and maintained the focus on the goal for a KM program offering. Refinement of the concepts, terms, and frameworks would come much later. Once individuals on the team developed enough of an understanding of the new field to be useful and contribute, then they also appeared to mirror a considerable level of excitement and passion. Most of them did not possess this passion when the work began, and it stayed with them even after the program had been offered for two years.

6.3.2 Primary Research Question—P.1, Part 2

(...) in order to create a program for conveying learning about this new phenomenon called “knowledge management”?

The Formal Process of Curriculum Design

I am now prepared to respond to the second part of the primary research question. Once the participants at each site felt they had been able to make some sense of KM, the activities they executed followed conventional approaches to curriculum and program design. As an example of a traditional curriculum and program design process, Maestra’s (1996) dissertation entitled *The Process of Revising General Education Curricula in Three Private Baccalaureate Colleges: A Ground Theory Study*, outlined a number of predictable stages in forging a curriculum. She outlined the standard activities curriculum/course development participants generally follow (p. 16):

- (1) Calling to Action,
- (2) Selecting the Committee,
- (3) Norming the Committee,
- (4) Setting the Direction,
- (5) Designing the Curriculum,
- (6) Approving the Curriculum Design, and
- (7) Approving the Courses.

These were evident in the curriculum and course design as well as the development processes described by participants at C-1 as well as at C-2.

A Discovered Process for KM Curriculum Design and Development

Of particular interest to my study was my discovery early in 2004 of the work of Wallace (1999). During an interview at my second site a general comment made by an informant led me to Wallace's dissertation. My literature search had not yet turned up her dissertation at that time because of the keywords used in my search strategy and the content of the dissertation's searchable abstract and title available in *Dissertation Abstracts (DA)*. There was no mention of a KM program design in the metadata at *DA*. The fact that the process she designed had been applied to a new KM program only became obvious by reading the detailed text of the document.

Wallace worked at the Ontario Institute for Studies in Education in the University of Toronto (UT) and her underlying research was integral to my insight into curriculum planning. As I previously mentioned in Chapter 2, Wallace developed a model and methodology for a proposed telematics (information technology combined with telecommunications and networking) curriculum in the Faculty of Information Studies (FIS) at the UT. During the process of curriculum design in FIS the content and focus evolved into a new KM program proposal. After reviewing the body of literature comprising curriculum development within information studies programs Wallace concluded:

If a body of literature had existed on the curriculum development process in information studies, establishing a theoretical framework and a context in which to ground this research study would have been a relatively minor task. ... Although a literature specific to curriculum development in information studies does not exist, resources on theory, principles, and concepts of general curriculum development in higher education, the aims and objectives of professional education, and the issues and trends influencing information professionals are available. (p. 9–10)

After reviewing a number of higher education curriculum development frameworks within the field of curriculum study, Wallace selected three frameworks for their respective core strengths associated with her study of curriculum development:

1. Dressel (1971) for its theoretical framework;
2. Diamond (1989) for its process model framework; and

3. Boyatzis, Cowen, Kolb, and Associates (1995) for its practical application framework.

All three frameworks influenced the resulting synthesized curriculum design process model for FIS, which Wallace captioned as *The Information Studies Curriculum Design Model* and described in detail within her dissertation. Wallace proposed a model consisting of three phases based upon the procedural question posed by Posner (1988): “what steps should one follow in planning a curriculum?” (p. 77). *The Information Studies Curriculum Design Model* consisted of:

1. Phase 1—Define Curriculum Project
2. Phase 2—Design Solution
 - 2.1. Step 1—Possible Directions
 - 2.2. Step 2—Select Direction
 - 2.3. Step 3—Define Program
3. Phase 3—Present Solution

Wallace pointed out in her rationale that a degree-granting institution could take between three and five years for the curriculum development cycle to run its course. Therefore, she suggested that, “A systematic approach to curriculum development is necessary in order to effectively manage the resources available for designing curricula, especially in a field that is continually evolving” (1999, p. 3). Wallace synthesized a systematic approach that could prove useful to corporate universities or institutions of higher education when architecting a new educational program.

Parallels of My Investigative Approach to Wallace’s Work

In the previous chapter I used three descriptive labels to outline the stages for my two cases:

1. Conception of the Program;
2. Initial Program Formulation, Design, and Development; and
3. Final Approval and Launch of the KM Program.

A high-level comparison with the phases/steps outlined by Wallace suggested that the two cases followed an approach parallel to the one at FIS. This is also congruent with

Maestra's (1996) approach. Thus, my overall finding was that each institution carried out its respective KM program development within a traditional curriculum development approach.

Neither institutional case reported that they had been guided by a specific methodology or curriculum theory, although C-1 did use the Alverno College method at a micro instructional design level for designing their curriculum learning outcomes for the courses. Thus, both institutions could be described as *typical*, not *atypical*, in their respective approaches to the formulation of their KM programs. An *atypical* situation might have been the contracting out of the curriculum design and development process, or a partnership/alliance with a professional association or private sector firm to offer existing off-the-shelf material created by the organizational entity.

Wallace not only proposed a process for curriculum design, but also identified two factors that substantially influenced and informed the FIS curriculum design process. The first factor was the focus on educating and preparing professionals that was derived from an explicit imperative of the faculty members of FIS. The second factor was the desire by the designers to create meaning in terms of clear intent, common understanding, and agreement on concepts and terminology used throughout the process. These two factors appeared in both cases. Wallace situated sensemaking as an integral element in her proposed program design process. In fact, she actually proposed CKC as a viable framework for assessing and evaluating the proposed curricula (1999, p. 117). My discovery of Wallace's emphasis on the importance of sensemaking in her resulting process design proposal and her choice of Choo's framework affirmed the choices I made very early in my investigation without knowledge of her work.

6.4 Knowledge Creation Information Processes

Nonaka and Takeuchi (1995) identified two fundamental types of knowledge they called *tacit* and *explicit*, and a relationship that exists between them. *Tacit* knowledge is the informal, difficult-to-communicate knowledge that resides 'between our ears.' *Explicit* knowledge is the formal, codified knowledge more easily transferred from one individual

to another, and is externalized in many forms: hardcopy, digital, audio, video, photographic, and, rarely, microform.

The complimentary relationship between *tacit* and *explicit* knowledge, coupled with four social conversion processes of *externalization*, *combination*, *internalization*, and *socialization*, circumscribe an overall knowledge creation spiral (previously described in Chapter 3). The organizational knowledge creation process encompasses the four modes of conversion: *tacit* to *explicit*, *explicit* to *explicit*, *explicit* to *tacit*, and *tacit* to *tacit*. Many enterprises have become experts at recognizing and cultivating a competitive advantage and innovative capability represented by the different modes of knowledge conversion (Nonaka & Takeuchi, 1995). Choo (1998) described the knowledge creation process in terms of a number of important activities: “During knowledge creation, the main information process is the conversion of knowledge. Members share their personal knowledge through dialogue and discourse, and articulate what they intuitively know through analogies, metaphors, as well as more formal channels” (p. 3)

6.4.1 Secondary Research Question S.1

<p><i>What new knowledge may have been created about KM through the program conception, design, and development processes?</i></p>
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In order to answer this question I summarize knowledge creation experiences at both sites within the context of: *socialization*, *externalization*, *combination*, and *internalization*. I then outline the knowledge that was spawned by the knowledge conversion processes. The varied content of the documents resulting from the knowledge creation process was previously quoted and described in detail in Chapter 5.

Socialization

Sharing previous experiences stimulates *socialization*. Existing *tacit* knowledge from actors who are communicating or transferring experiences is converted into new *tacit* knowledge within each actor by means of a *social* activity such as imitation, observation, replication, or practice. The material ‘between the ears’ stays ‘between the ears,’ but new *tacit* knowledge is created and stored by the actor.

At both C-1 and C-2 the *socialization* process intrinsic to the curriculum development process laid the foundation for the:

- adoption of an acceptable definition for KM;
- development and design of the curriculum and courses;
- development/adoption of a conceptual framework for the KM program;
- identification of candidate Advisory Board members;
- identification of candidate BOK material for inclusion in the course design;
- interaction processes with the curriculum approval body;
- minimal use of IT during the KM program development activities;
- reduction in ambiguities, contradictions, and uncertainty associated with KM.

Not surprisingly, *socialization* was pervasive throughout the development activities associated with the two KM programs.

Advisory Board members who were practitioners acquired knowledge of the academic environment and curriculum development process by ‘apprenticing’ to the academics. These practitioners discovered how learning outcomes, competency and skills matrices, curricula, and course syllabi were constructed and integrated into program development. The academics who possessed little practitioner experience acquired a vocabulary and a range of stories while being ‘apprenticed’ by the practitioners. This apprenticing permitted the academics to inculcate a pragmatic understanding of the needs for KM expertise in the workplace as well as the application of learning outcomes to experiential and problem-based learning. Apprenticeship is a trademark of the *socialization* process (Nonaka, Toyama, & Konno, 2001).

The thought leaders identified the *social* limitations of using IT early on in the development process and purposefully limited its use. The leaders perceived that a loss in time and money associated with the identification, assessment, selection, deployment, training, and support would negate any possible gains in speed that the tools might permit. Some informants expressed a feeling that the use of software applications might possibly inhibit innovation. Those informants felt that IT applications could exhibit a

type of ‘friction’ when *tacit* information and knowledge is converted to *explicit* information and knowledge, and then converted back to *tacit* information and knowledge.

Instead *socialization* was fostered by personal contact and group interaction. A number of studies on group dynamics support the wisdom of this decision considering the significant time pressures and constraints amongst a newly formed group (Morris, Nadler, Kurtzburg, & Thompson, 2002; Thompson, & Coovert, 2002; Thompson & Nadler, 2002). The thought leaders’ experience in previous curriculum development projects coupled with the advice from other experienced academics implicitly suggested that the best method for learning from each other early in the process was face-to-face group work.

Imitation and replication activities played an increasingly crucial role during the approval process with the S/PEA. The thought leader and senior development officer acquired new knowledge about the approval process while interacting with the S/PEA, and incorporated this in subsequent submissions. By the time the third proposal was submitted the agile team members had developed considerable insight into what would sell and how it should be packaged. The thought leader, senior program designers, and some Advisory Board members exhibited an aura of emotional commitment that was transformed into passion and subsequently adopted by all the participants.

At C-2 the thought leader created the foundation for the *socialization* process by offering courses and seminars to stimulate discussion and interchange. His/her seminars, luncheon speakers, periodic PDC meetings, and final CRC presentation and meeting were good examples of an experienced leader’s scaffolding technique for increasing awareness and insight of the topic through continual face-to-face interaction. The *socialization* process for the thought leader also produced an *explicit* recognition by almost all the participants that the leader had the background, knowledge and experience to efficiently and effectively direct and manage the KM focus within the curriculum development process.

This demonstrated the thought leader's capability to apply KM techniques within the team and parallels the experiences discovered by Takeuchi and Nonaka (2004) when they described the steps involved in successful corporate situations of *socialization* in Japan:

First, the socialization mode usually starts with building a "field" of interaction. This field facilitates the sharing of members' experiences and mental models. Second, the externalization mode is triggered by meaningful "dialogue or collective reflection," in which using appropriate metaphor or analogy helps team members to articulate their hidden tacit knowledge that is otherwise hard to communicate. Third, the combination mode is triggered by "networking" newly created knowledge and existing knowledge from other sections of the organization, thereby crystallizing them into a new product, service or managerial system. Finally, "learning by doing" triggers internalization. (p. 65–66)

Externalization

The point where new ideas are turned into products that can be manipulated by the actors is the place where *externalization* takes place and *tacit* knowledge is converted into *explicit* knowledge. *Tacit* knowledge was *externalized* during collective reflection, discussion, or dialogue in the form of documentation, analogies, metaphors, models, or sketches.

At C-1 the practitioners and academics reviewed the other program offerings at the University and crafted a definition and conceptual framework to relate the KM program strategy to the specific mission, goals, and objectives of the University. The designers relied upon two program evaluations as a means to 'ground' their work for the S/PEA. The goal of the program evaluations was to incorporate external recommendations and optimize the KM program in relation to its intended purposes. Incidentally, the program evaluations also stimulated *socialization* between the program evaluators and a broad range of the participants at the University. The result was the absorption of new knowledge about conceptual frameworks, course content, curriculum structure, definitions, learning outcomes, and assessment criteria by many of the actors.

At C-2 the thought leader proposed a definition and conceptual model that integrated *tacit* and *explicit* knowledge assets within KM technology infrastructure. The definition

and model facilitated understanding by the participants who responded very well to picturing the images of a process-centric model joined to a document-centric model by means of a specialized IT framework. This conceptual framework provided the stimulus to move to the next stage.

Provisional KM Definition

Based upon the discoveries within the two cases, various incongruent definitions for KM appeared to be possible, plausible, and actually desirable. Proposing a formal, definitive definition for KM was beyond the scope of this investigation, even though I had put forward a synthesized definition in Chapter 2 that served to guide the study. Nonetheless, a description of KM based upon a synthesis of the definitions outlined earlier by the two institutions (described in Chapter 5, Section 5.3.5) may become useful as a catalyst for initiating future dialogue amongst KM academics and program designers.

The two institutions separately synthesized, harmonized, and packaged a definition for KM. The resulting definitions were based upon existing KM definitions of that time and the culture and philosophy of each institution. The following synthesized definition merges the material from the two cases:

- 1) Knowledge Management (KM) is an emerging field that promotes a systematic stewardship of the knowledge assets used in an organization. The knowledge assets are usually expressed in terms of two types of knowledge—*tacit* and *explicit*. *Tacit* knowledge is the informal, difficult to communicate knowledge that resides ‘between our ears.’ *Explicit* knowledge is the formal, codified knowledge that is more easily transferred from one individual to another and is externalized in many forms: hardcopy, digital, audio, video, photographic, and rarely microform.
- 2) Examples of *tacit* knowledge may include the knowledge of workers in terms of their expertise, intuition, work practices, and work experience. Examples of *explicit* knowledge may be located in databases and documents, business and competitive intelligence, photographs of physical facilities, and documented organizational policies, processes, and procedures, to name but a few examples.
- 3) KM incorporates a life-cycle approach to managing the knowledge assets of an organization from acquisition and creation stages; through secure access, mobilization, diffusion, and commoditization stages; and finally terminating at the retirement, recycling, or archiving stage.

- 4) KM may be expressed as an organizational strategy that optimizes the life-cycle processes for data, information, knowledge, and collective wisdom in order to contribute to organizational efficiency and effectiveness.
- 5) KM recognizes organizations as open ecological systems where information, knowledge, and energy flow and are exchanged with other individuals, groups, and organizational entities. KM processes and systems acknowledge that the surrounding social, economic, and political systems can affect organizational KM production and diffusion.
- 6) KM is pervasive and integrates concepts, frameworks, methods, methodologies, models, techniques, and tools from a wide spectrum of other fields, disciplines, and practices. KM, when practiced effectively, incorporates more than the sum of the parts involved. For example, when KM is expressed within a community of practice, its value and strength is illustrated by the breadth, diversity, experience, and knowledge of the individuals involved in the community as a whole. This collective knowledge is more valuable than the individual contributions.

Provisional KM Conceptual Framework

Similar to the irony of multiple institutional definitions for KM, various frameworks for KM also appeared to be desirable and necessary. Proposing a definitive formal conceptual framework for KM was also beyond the scope of this investigation. But, a description of a KM conceptual framework based upon a synthesis of the conceptual frameworks¹² outlined earlier by the two institutions may also stimulate future dialogue.

The two institutions separately incorporated and architected conceptual frameworks for KM. The resulting frameworks were based upon existing KM frameworks of that time and the culture and philosophy of each institution. The following synthesized framework merged the material from the two cases:

- 1) Overall, the conceptual framework for a KM educational program is expressed in terms of the interaction of numerous types of wealth—signified as different capitals. There is a high level, all encompassing Institutional (or Corporate) Capital that depends upon the effective use of KM to contribute directly to

¹² A new KM program would be hard pressed to avoid using at its foundation the conceptual approaches described in Davenport and Prusak's *Information Ecology* (1997) and Davenport and Prusak's *Working Knowledge* (1998) because of their historical acceptance and endorsement by widely respected pundits.

organizational learning and the achievement of organizational goals. Institutional Capital is composed of:

- a) Social Capital,
 - b) Human Capital,
 - c) Structural and Asset (Intellectual Property) Capital, and
 - d) Ecological and Environmental Capital.
- 2) A KM educational program integrates core concepts, cultural transformation processes, strategies, tools, and techniques from established fields and disciplines for implementing theories of knowledge production and distribution within a KM Life-Cycle.
- 3) A KM educational program draws upon a broad spectrum of fields and disciplines to achieve its goals, including:
- a) archives, document, and records management,
 - b) artificial intelligence, expert systems and knowledge engineering,
 - c) business administration,
 - d) business process management,
 - e) cognitive science,
 - f) computer and information science,
 - g) entrepreneurship,
 - h) epistemology,
 - i) information architecture,
 - j) information management,
 - k) information technology,
 - l) journalism and mass communication,
 - m) leadership,
 - n) library science,
 - o) organizational behaviour,
 - p) organizational communications,
 - q) organizational design,
 - r) organizational psychology,

- s) organizational theory,
- t) organizational learning,
- u) organizational studies,
- v) systems engineering,
- w) systems theory, and
- x) systems thinking.

Combination

Following this conversion process to the next stage, *combination* results when existing sources of *explicit* knowledge are synthesized and converted into new *explicit* knowledge. During this process the actors *combine* their knowledge through brainstorming, dialogue, emails, meetings, planning strategies, presentations, and telephone conversation. Actors might catalogue, classify, collate, synthesize, or sort hardcopy or digitally stored information producing new *explicit* knowledge. “In combination, new knowledge generated through externalization transcends the group in analogue or digital signals” (Nonaka & Nishiguchi, 2001, p. 18).

At both C-1 and C-2 the *externalization* and *combination* processes produced a number of important documentation containing useful explicit knowledge:

- competencies and skills matrices;
- course bibliographies that formed the nucleus of the candidate BOK material required by this particular program;
- conceptual framework for the KM program;
- curricula frameworks and course syllabi incorporating learning outcomes;
- definitions for KM;
- future course concepts for new topics;
- market research proposal and study results;
- marketing brochures and advertising copy describing the program offerings;
- program evaluations; and
- program proposals to the curriculum approval bodies and written feedback.

Based upon the generalized course titles previously reported in Chapter 5, a number of course topics can be proposed for future KM programs where particular emphasis is prevalent in the sponsoring bodies. Appendix I contains outlines of course titles that emphasize leadership, sustainability, LIS, and business.

Other ephemeral material produced during the processes included emails, contact lists, correspondence, internal working/discussion documents, meeting agendas and minutes of meetings, orientation packages, and other KM program material extracted from the Internet and personal notes. Extracts from this material were detailed in Chapter 5.

Internalization

Explicit knowledge is turned by an actor into *tacit* knowledge during the *internalization* process. Business Process maps, documents, corporate myths, narratives, policies and procedures, simulations, and stories formulate *internal*, shared mental models and work practices. The actors indirectly re-experience the experience, know-how, and expertise of other actors through these artifacts. “Internalization ... is closely related to ‘learning by doing’ ” (Nonaka & Nishiguchi, 2001, p. 17). At both C-1 and C-2 the *internalization* process, like the *socialization* process affected the participants personally because they completed the project with:

- an acceptance of the intrinsic ambiguities, contradictions, and uncertainty associated with an emerging field like KM;
- an appreciation of the difficulties of trying to place a definition on an emerging field;
- an awareness of the roles, responsibilities, and jobs of a graduate from the program;
- an awe of the range of subjects and subfields comprising KM and respect for this emerging field;
- a deeper insight into the evaluation criteria of the curriculum approval body;
- identifiable and valuable lessons learned;
- increased experience and understanding of the formal activities involved with the development and design of curriculum and courses; and

- a framework for assessing BOK material for KM.

Specifically at C-1, the team had *internalized* and now owned a unique, consistent, and defensible conceptual framework for the KM program; at C-2 the team had *internalized*, through acquisition and incorporation, an already existing, ‘tried and true’ KM conceptual framework authored by the thought leader.

Both institutions referenced Davenport and Prusak’s (1998) *Working Knowledge* as an analogy for building and internalizing their own respective conceptual frameworks for the KM programs. As mentioned earlier in Chapter 5, Davenport and Prusak did not define KM in *Working Knowledge*. Instead, they described KM in terms of processes in which knowledge was generated, codified, coordinated, and transferred, resulting in enhanced organizational performance. Both institutions used this analogy as a foundation for their evolving and increasingly elaborate conceptual frameworks.

6.4.2 Secondary Research Question S.2

What general learning outcomes were proposed in the KM programs under study to convey learning about KM?

General learning outcomes that appeared in a number of program level documents were described in detail in Chapter 5. Both institutions asked that specific details about course learning outcomes be kept confidential. Learning outcomes are a proprietary intellectual asset for organizations whose survival relies upon competitive advantage. Members at both institutional settings emphasized to me that, regardless of what was contained in a course syllabi, learning outcomes were a guide, albeit, an important one for directing a program. However, the teaching results caused by the learning outcomes relied heavily upon the background, experience, and teaching approach each instructor used to engage the students.

I executed a broad content analysis of the courses offered at each institution incorporating the overarching program-level learning outcomes proposed as well as the course learning outcomes. Then, I adapted the competency area headers from the taxonomy for skills and

competencies of a Knowledge Manager published by the US Department of the Navy (US DON) (2001a, p. KM-33–KM-57). The resulting arrangement in Appendix J helped to break up the learning outcomes so they were more than an unstructured list of items. I synthesized the learning outcomes previously outlined in Chapter 6 and integrated adapted material from the US DON matrix to create readable learning outcome descriptions that reflected the intent of the synthesized outcomes from C-1 and C-2. The outcomes were numbered contiguously for reference purposes. The courses developed at C-1 and C-2 exhibited a particular flavour for conveying KM skills and competencies based upon the instructors' preferences, disciplinary orientation, and the culture and philosophy of the institution.

Profile of the Anticipated Graduate from the KM Programs at C-1 and C-2

I subsequently drafted a profile in the same manner and style as a human resources job description (see Appendix K). The generic, composite profile describes the anticipated background, competencies, education, experience, and skills for a student graduating from a KM program. The composite profile reflected the synthesis and interpretations of program material and course descriptions from both institutions and suggested a title of *Knowledge Manager* for the hypothetical position. This may serve as the basis for future comparisons with studies where the anticipated job roles in KM are described.

Categories were synthesized and separated into specific job-related elements: overall responsibility; essential and additional duties and responsibilities; education, knowledge, and experience; qualifications, skills, and abilities; and relationships of the resource with others in the organization. Both institutions, although starting from different perspectives and having heterogeneous core courses and electives presented a convergent view of the KM program graduate (based upon a tight interpretation of their usage of terms). At the same time the institutions diverged sufficiently to add their institutional 'flavours' based upon different cultures and academic emphases. Some of the additional profile elements of the anticipated graduate from the KM Program at C-1 and C-2 are outlined in labeled roles within the appropriate section.

As described in Chapter 2, a number of more detailed competencies and skills matrices for knowledge professionals have been published since the programs in these two cases were conceived (Abell, 2000; Abell & Oxbrow, 1999, 2001; US Department of the Navy, 2001a; Koenig, 1999; Owen, 1999; TFPL, 1999). This work indicates an increasing interest in educating KM professionals (Adamson & Handford, 2002; Ajiferuke, 2003; Al-Hawamdeh, 2005; Rehman & Chaudhry, 2004). The suite of competencies and skills in these published matrices are considered essential for the evolving interdisciplinary nature of KM applied to the business environment. They encompass at least 75% of the previously described role description.

External Expertise Drives the Vision and KM Pedagogy

Since KM educational programs comprise knowledge about KM itself, e.g., “How do we teach learners about KM?,” it is fitting to report this new knowledge here. Other new knowledge about KM programs and their development was consequently created from these two program development initiatives. C-1 lacked access to internal academic resources qualified in KM during the conception, design, and development processes. C-1 was able to rely upon a cadre of well-picked members who were invited to join its KM Advisory Board.

This initial weakness in resources elongated the effort to pull together a conceptual framework, curriculum design, and course designs. This obstacle also highlighted the challenge associated with strong, influential personalities that were on the Advisory Board. The qualified practitioners invited to participate as Advisory Board members created a minor level of dissonance during the conception and design stages. Many of the advisors, who were respected mid-level practitioners, tried to impose on the other team members their personal visions, specialized perspectives, narrowly tested conceptual frameworks, and heterogeneous definitions of KM. No specific Advisory Board member had the visibility and respect to carry the group as a whole. The thought leader expressed during an interview that an inability to interest a high visibility KM expert and thought leader to lead the work significantly extended the elapsed time associated with the

initiative. C-2 did not highlight any critical shortcomings associated with the lack of KM expertise.

Concerns about Marketing, Branding, and Demand Forecasting

The biggest concern about potential success revolved around the marketing, branding, and demand forecasting. Even though C-1 had carried out a market research study, it was not broad enough to identify worthwhile trends or critical success factors. C-2 lacked the resources for a market research study, and this inhibited his/her team's ability to 'narrowcast' their advertising to the right audience and locate the ripe candidates for the program. The desire for more positive results when faced with the realities associated with the lack of internal programs for branding, marketing, and sales is not surprising. In Ajiferuke's (2003) study, few of the information professionals involved with KM projects who had responded to his survey knew where KM was being taught. In fact:

Some of the respondents would also like the professional bodies to organize courses to educate the professionals on knowledge management concepts and principles. One of the interviewees also suggested that information professionals might want to enroll for a knowledge certification program that would certify their competencies in knowledge management...The respondents also would like the library and information science schools to develop and offer a course in knowledge management for their students (p. 337)

Another marketing and sales oversight that the informants felt should have been remedied was the failure to actively pursue all leads generated from the website. This would have yielded a treasure trove of interested potential candidates. At C-1 there was a realization that the website was getting a tremendous number of hits, but the smaller enrollment reflected less than 10% of the hits recorded. Time, money, and resources were not available for investing in the mining of the data from the website. At C-2 no one mentioned any program for mining data collected from the KM website. In fact, C-2-1 indicated that his/her program depended too much upon word-of-mouth and alumni recommendations instead of upon a concerted sales and market campaign. Of course, without a budget and a heterogeneous market focus for the potential audience, this was a mute point. Both sites also concluded that they may have entered the market at the wrong

time and offering the KM program during and after the dot-com meltdown and bust may have affected enrollment and interest.

Agility and Teamwork

At C-1 the key strength was the youthfulness of the institution. This strength bred flexibility, a culture willing to listen to the needs of learners and employers, and a capability to handle contradictions associated with concurrently broad and narrow program offerings. The critical weakness was the lack of cohesion amongst new full-time and adjunct faculty hired to deliver the courses, since all the new hires did not appreciate the institution, its culture, and its values. Using Simon's (1957, p. 25) analogy of chess from the *Models of Man*, I would suggest that the majority of the instructors knew virtually nothing about the theory of chess and very little about the actual goal of chess (to win by taking the King). Finally, they even knew less about what the pieces signified and how the pieces moved.

The critical strength emphasized at C-2 was the ability of two major graduate schools, the LIS School and the Business School, to smoothly work together on a joint vision that resulted in a shared program. Both Deans owned a piece of the program and were committed to its success. Another major strength was the thought leader's ability to engage a number of local alumni, practitioners, and academics in joining the advisory board. The principle weakness described by a number of informants at C-2 was the inability to provide C-2-1 with the appropriate amount of administrative support so he/she could concentrate on the conception, design, and development. While the thought leader was trying to build the KM Center and architect the KM program, the thought leader also had to carry out his/her regular and administrative duties, and invest in publishing activities that would ensure timely tenure approval.

6.5 Decision-Making Information Processes

6.5.1 Background to the Research Findings for Question S.3

Bounded Rationality

Choo (1998) in *The Knowing Organization* outlined different frameworks describing organizations as decision-making systems. Any of these frameworks could be applied to the interpretation of organizational decision-making:

- *Rational Model*—developed by March and Simon (1958) and Cyert and March (1963) and describing a decision-making model based upon rational individual and organizational behaviour regulated by rules and routines;
- *Process Model*—developed by Mintzberg, Raisinghani, and Théorêt (1976) and describing the structured phases and life-cycles involved in complex and dynamic decision-making;
- *Political Model*—developed by Allison (1971) and describing the interplay of influence instead of rationality, in political decision-making; and
- *Anarchic Model*—developed by Cohen, March, and Olsen (1976) and describing the randomness of choices, people, problems, and solutions that can converge as independent streams into a decision-making event, like the trash strewn about a garbage can.

The model I adopted for discussion of my findings was the *Rational Model*, which is based upon the theory of *bounded rationality* (March, 1988; March & Simon, 1958). As previously mentioned in Chapter 3, the theory of *bounded rationality* facilitates the interpretation of organizational decision-making when information used for decision-making is ambiguous, contradictory, fuzzy, or unclear. Ideal rational choices are difficult to make when circumstances are muddled and lack clarity.

Decisions take place within the *bounded rationality* of the individuals involved. The *bounds* are comprised of individual limitations and constraints. Three categories for *bounds* were described by Simon (1957, p. 40–41, 241):

1. an individual's cognitive capabilities in terms of experience, habits, mental skills, reflexes, and training;

2. an individual's capacity to handle the processing of concurrently broad and narrow domains of knowledge and information;
3. an individual's personal values, rationales, and priorities that may differ from an organization's goals.

These *bounds* work together to create the basis for individual decision-making; but the decisions take place within the overall constraints imposed by the organization upon the individual actors.

Organizational Constraints

The organizational constraints are called the *decision premises* and support the individual in trying to make rational decisions for the organization. *Decision premises* are the organization's goals and objectives established to guide decision-making. For example, a *decision premise* adopted by the two sites was: "Any new academic program must fit into the overall mission of the university and be able to quickly generate profitable revenue streams." Such a premise would automatically limit decisions about programs that didn't fit the current mission of the university and that might require new faculty lines or necessitate significant investment. The *decision premises* guide the *decision routines*. In the two cases a number of embedded *decision routines* already existed that needed to be navigated by the thought leader and participants, e.g., new program submission and approval process, curriculum and course development processes, and Advisory Board selection and invitation processes, to name but a few. These comprised previously established routines and procedures for planning and carrying out certain academic activities.

Organizational decision-making relies upon *decision routines* to help the individual cope with the complexity of decisions. The routines (often described in terms of plans, policies, procedures, or standard operating procedures) incorporate the best practices and lessons learned from previous decisions the organization acted upon. *Decision routines* are built upon two strategies for *bounding rationality* and reducing complexity: *satisficing* and *simplification*. "The decision maker's information about his environment

is much less than an approximation to the real environment....In actual fact the perceived world is fantastically different from the 'real' world" (Simon, 1957, p. 272).

Satisficing and Simplification Strategies

Satisficing is the strategy where the actor searches for what appears to be the most satisfactory, but not the best or most optimal alternative course of action for a decision. For a course of action to be *satisfactory*, the actor judges the course of action with a minimally acceptable set of evaluation criteria. *Simplification* is a strategy initiated by an actor in order to reduce the equivocal nature of the situation, and thus reduce ambiguity, contradictions, and the complexity surrounding a decision. *Performance programs* (expressed as actions and decisions) are a specialized form of *simplification* that represents the corporate and procedural memory for recurring decisions. *Decision premises* and *decision routines* guide an individual's decision behaviour so that it comes close to being rational as defined within the organization's rational decision behaviour. All of these comprise a framework for rational organizational decision behaviour.

6.5.2 Secondary Research Question S.3

How has the new knowledge created about KM contributed to the decision-making process for new program development?

Common Decision Points

A major trigger decision at both sites was based upon the response to one implied question: "*Should the University establish a KM Master's program as a means to build a new, profitable revenue stream?*" All other significant decisions were a consequence of this one decision point. Interestingly, both institutions responded with an almost unconditional "*Yes.*" The consequential courses of action and subsequent follow-on decisions that flowed from this decision took over two years for each of the universities to complete and bring to fruition as an offering. Appendix L, Table L-1, outlines the suite of common decision points presented to the decision-makers at both institutions.

The list of decision points is not meant to be exhaustive, but is at least indicative of the spectrum of assumptions, concerns, issues, and obstacles that the institutions grappled

with. Needless to say, the collected data suggests that many of the questions posed in Table L-1 have gone unanswered, or were unanswerable because the information required to respond to them was insufficient or totally unavailable. Very little was captured in documents around any of these decision points. This range of questions is congruent and has been reiterated in the discussion surrounding the design of other KM programs (Al-Hawamdeh, 2005; Loon & Al-Hawamdeh, 2002; Na-Lamphun & Lee, 2002; Southon & Todd, 2001). I would presume these questions will continue to haunt KM program designers for at least the near-term, or until the KM field has significantly stabilized. Nonetheless, the lack of answers did not stop the two institutions from architecting and offering KM programs.

Imprecision of Personal Memories

As previously highlighted, personal memories were imprecise at articulating the historical decision-making process. When I tried to assemble a tentative timeline of activities and events I was presented with numerous contradictions by the informants about the timing of events. Those were not the only time-biases that may have been introduced. Relying on retrospective data from the informants presented a problem. Generally, at least four significant biases were introduced:

- *hindsight bias*—memory distortion: when the memory distorts events by resorting them into a new order so they implicitly lead to an actual outcome (Hawkins & Hastie, 1990, p. 311; Weick, 1995, p. 28)
- bias associated with assumptions about reality, intention, and necessity (March & Olsen, 1979, p. 19):
 - *reality bias*—“what happened appeared to happen,” where there is an impression that organizations execute rational, predictable decisions;
 - *intention bias*—“what happened was intended to happen,” where a causal chain occurred because the actor intended for it to occur from the moment it happened;
 - *necessity bias*—“what happened had to happen,” the observed outcome was fated, inevitable.

However, the imprecision in the recollection of the events need not be interpreted as nullifying the sensemaking experience. Weick (1995) admonished researchers to not give up hope on the accuracy of these experiences:

Investigators need not adopt pragmatism to use the idea of retrospective sensemaking. Any perspective can be inserted into the here and now as long as its effects on remembering are traced through to answer the question of why people make the sense they do of their ongoing activities. If one person can be preoccupied with the here and now, so can others. And whatever that preoccupation is, it can impose a figure-ground relationship on elapsed experience, thereby facilitating sensemaking. “No lived experience can be exhausted by a single interpretive scheme (Schutz, 1967, p. 85).” [cited in Weick]. (p. 28)

In fact, as mentioned earlier in this chapter, a study, such as the one done by Wallace (1999) at UT, would have been the kind of framework, if adopted, that would have been more conducive to documenting the decision-making process. The presence on site of an individual carrying out an ethnographic study or some other qualitative investigation would be an ideal opportunity for research. Capturing and documenting the decision-making process while the program was under development would be a more optimal opportunity to understand the parameters of the decisions as well as alternatives considered.

Of course, this does not suggest there was absolutely no information available about decisions, since the interview data and documents presented a patchwork of decision data that could be interpreted. For example, each institution decided to initially offer a post-baccalaureate credential as a feeder into their eventual graduate degree because it was easier to approve than the Master’s degree. The decisions and actions to create a KM graduate diploma/certificate were different at each institution.

Entrepreneurial Drive at C-1 to Overcome the Friction Caused by the S/PEA

C-1 was motivated by an entrepreneurial drive to quickly offer something of value to interested learners who had received information about the budding program and wished to enroll. The graduate diploma did not require S/PEA approval in order to offer it. The potential opportunity loss was considered too risky to put off an offering any longer while

the team continued to wrestle with the disapprovals received from the S/PEA and the need for resubmission.

After the second submission and disapproval by the S/PEA at C-1, the thought leader had collected sufficient enrollment information from the graduate diploma offering. He/she was also receiving additional notes of interest from potential learners that lead the thought leader to realize that an offer acceptable to S/PEA was quickly required or the program would lose momentum. Thus, C-1 changed its proposal and resubmitted the degree offering as a MA in KM and a MBA with a KM concentration. The most critical obstacle presented by S/PEA was overcome with such an offering, i.e., that not enough 'science' or 'technology' appeared in the curriculum to offer a MS or MSc. A MKM was an unknown, untested, and possibly unattractive degree to offer.

At C-2 the institution insisted upon a foundation for testing the feasibility of a Master's program. The results from offering a certificate suggested such an offering was viable. Consequently, program approval was received and the thought leader was able to proceed with expanding his/her offer of a MS or MSc in KM that was a shared program of the LIS School and the Business School.

Traditional Universities—Help or Hindrance When Offering KM Programs

The *decision premises* at both institutions influenced and constrained the individual approaches to major decisions about the KM. For example, at C-1 participants expressed their increasing awareness that the University environment might not be the best place to build and offer a KM program after they learned more about KM. Traditional universities consist of highly bureaucratic departments that are often portrayed as silos that seldom share information or knowledge with each other. Political and turf sensitivities appear widespread in universities. These institutions display a penchant for slow, incremental change and seldom foster innovation or revolutionary changes in their own business processes or corporate culture.

Thus, these traditional universities could be characterized as unable to ‘walk the talk and talk the walk’ when it came to being entrepreneurial or applying other KM principles such as agility, flexibility, and sharing. Since the thought leader at C-1 was the Dean, he/she was an experienced politician within the university. The thought leader and team did not give up in the face of demoralizing feedback and refusals by the S/PEA to see the value proposition in an innovative, untried, applied graduate program offering. The team persevered and continued to passionately drive the program to the stage it could be approved and offered to learners who were keen to begin.

Inhibiting Bureaucracy of the S/PEA at a Public Institution vs. Agility of a Private Institution

An additional *decision premise* that inhibited the development and approval of the program offering at C-1 was the formal, opaque process surrounding the S/PEA and its internal criteria for approving/disapproving program submissions. The cumbersome and slow process for distributing the proposal to committee members coupled with the *star chamber*¹³ setting worked against a speedy, efficient, and effective approval process. Such an organization was never designed to respond on a timely basis to any new or innovative ideas where slow ‘time to market’ with a product could negatively affect future market share.

On the other hand, at C-2 a number of informants expressed the ability to make quicker decisions in a small privately-funded institution where the approval of an external group, like an educational Board of Regents, was not necessary to proceed. Nonetheless, the privately-funded institution was hampered in its decision-making by the conservative financial approach of minimal financial risk necessary for new programs. External funding for new faculty lines, increased adjunct salaries, or a digital lab with the normally expensive software associated with KM projects were not immediately available.

Recently a survey by Rehman and Chaudhry (2005) confirmed these obstacles as major

¹³ Star chamber is a term often associated with secretive groups of judges who meet to decide the fate of individuals, in the case of the legal system; or conspiratorial cartels of capitalists that decide an economic marketplace will be controlled and divided. Star chambers do not permit the target of the hearing to be present in order to convey its side of the situation. Members of a star chamber also do not answer questions in an open dialogue.

stumbling blocks that the heads of twelve LIS schools teaching KM have highlighted and added:

One of them referred to the university policies for resource distribution that made it difficult for them to have joint course offerings, as the funding policies inhibited such initiatives. Two of them held the view they did not have enough time to generate these relationships. One head simply stated that they did not have links for such collaboration. Another observed that such initiatives could only be successful if one of the departments took a lead role and contributed significant resources to the project.... From this analysis, it is clear that most heads were apprehensive about the collaboration potential or initiatives. Political and turf sensitivities were among the most serious impediments. (p. 10)

Both institutions revealed that *decision premises* significantly affected their timelines for offering and delivering the KM programs.

Lack of a Documented Program Development Procedure

Looking at *decision routines* I found that both institutions embarked upon new program development processes without an *explicit*, documented program development procedure to guide them. The thought leader at C-1 worked from a broad and deep experience base in program and curriculum development. He/she didn't require documentation or highly structured process for planning and guiding the team. The thought leader possessed a deep *tacit* knowledge of the activities involved in such an undertaking and was skilled at facilitating groups and building a collegial, collaborative culture. On the other hand, at C-2 the thought leader was a new faculty member (who was an experienced academic, but a more highly visible practitioner). He/she relied heavily upon the tacit guidance from the two Deans for directing and tasking the CRC and PDC approval bodies. I did not encounter any document that suggested new program development followed a specific set of activities documented in a written procedure. C-2-1's practitioner experience certainly provided a foundation for building group consensus and collaboration amongst a diverse group of internal participants and external advisory board members.

Classical Phases Associated With the Decision-Making Life Cycle

The personal experience of the thought leaders along with the *decision premises* and *decision routines* inherent in the institutions made possible the examples of *satisficing*

and *simplification* that occurred. Since decision-making is not considered a perfectly organized, totally rational and logical process, the strategies of *satisficing* and *simplification* are almost predictable from a common sense perspective. The trigger decision point for both institutions mentioned earlier in this section was: “*Should the university establish a KM Master’s program as a means to build a new, profitable revenue stream?*” Each institution formally and informally embarked upon the decision-making steps of defining the problem, collecting the relevant material, developing a range of alternatives (possibly with the assistance of experts), selecting an optimal solution, managing the implementation, and eventually evaluating the success of the program. These steps correspond to the framework describing four classical phases associated with the decision-making life cycle proposed by Simon (1997):

1. *intelligence phase*—the acquisition, categorization, processing, and arrangement of raw data from the environment;
2. *design phase*—outline alternatives and forecast feasibility of possible outcomes for each alternative. If data is insufficient, then return to the intelligence phase;
3. *choice phase*—select the best alternatives that contributes the most to the organization’s goals and implement. If the potential solutions are unsatisfactory, then return to the design phase; and
4. *review phase*—monitor and evaluate the action taken. If the execution of the decision is not a success, then change assumptions and return to the choice phase.

Intelligence Phase at C-1

During the *intelligence phase* activities at C-1, team members searched far and wide for information that would help describe and define the emerging field of KM. Yet, a remark heard more than once was that even during the search and discovery process, the field seemed to be expanding, morphing, and changing. KM, as a new field was virtually impossible to ‘nail to the wall.’ The decision made by team members and most importantly, by the thought leader, was to use focus groups as a means to discover more about KM.

C-1 reflected an entrepreneurial model in its mission. Such a model created the opportunity for two professionals, the Librarian and the Program Development Officer, to carry out a serendipitous conversation that resulted in the idea to consider a new, unique, and innovative program. Further imaginative conversation between these two participants and the former Dean built a critical mass of interest and authority to act on an emerging field that none of them really understood in much depth, although all of them were convinced that it had incredible potential. They were encumbered thereafter by the previously established, slow moving, academic program approval process for publicly funded educational institutions.

Once the excitement for a new KM program took hold, the participants developed personal approaches to self-education that helped them to become informed about KM. By the time the initial *intelligence phase* activities were coming to a preliminary conclusion, the team had discovered enough information about KM to begin the program development process with new found passion. This lack of definitive information certainly stymied the participants, but did not aggravate them or ‘stop them in their tracks,’ so to speak.

Design Phase at C-1

Once the *design phase* was initiated, additional deficiencies in the information collected were discovered in conjunction with dialogue between internal participants and the invited Advisory Board members. These practitioners confirmed that a single definition for KM did not exist, that no BOK had yet been identified to encompass all that comprised KM, and that no body of authoritative pundits existed—only lone voices, each singing a unique tune.

Choice Phase at C-1

In order to proceed to the *choice phase* the thought leader, in consultation with the colleagues on his/her team, chose a curriculum development approach that was *satisficing*, but certainly not optimal as illustrated in many of the interviews. The leader and team members were *satisfied* that consensus had been reached on a minimal

definition of KM, minimal identification of BOK candidates, and minimal identification of core topics to be covered in the KM course design.

C-1 decided to exclude certain topics from the initial offering for a number of reasons:

- no course designers or qualified faculty could easily be identified;
- the potential reading lists for certain topics were not comprehensive; or
- there was a perception that, although very interesting, certain courses might not initially hold an interest for the perceived target audience.

Initially the excluded courses encompassed a range of potentially interesting topics: systems thinking, LIS topics related to knowledge organization and representation, complexity and chaos theory, and competitive/business intelligence.

Review Phase at C-1

A subsequent informal *review phase* (the time when this investigation was taking place and questions were asked concerning the best practices and lessons learned) emphasized that the team had expressed considerable confidence that they had done a very good job. They felt that the program's overall design with the initial program release of KM courses were satisfactory for the first version. Considering their admitted lack of definitive information about KM, they *simplified* the concepts of KM to a cognitive level that their university and S/PEA colleagues could now comprehend. The unique conceptual framework they forged was a tool for *simplifying* the complexity associated with KM and developing a 'brand identity' for a KM program built upon leadership and ecological principles. March and Simon (1958) suggested:

The basic features of organization structure and function derive from the characteristics of rational human choice. Because of the limits of human intellectual capacities in comparison with the complexities of the problems that individuals and organizations face, rational behavior calls for simplified models that capture the main features of a problem without capturing all its complexities. (p. 151)

Intelligence Phase at C-2

When I interpreted and framed the activities at C-2 within Simon's life-cycle of decision-making phases, I discerned a similar pattern of using *satisficing* and *simplification*. For

example, during the *intelligence phase* activities at C-2, team members did not have to search as much for original information that would describe and define KM. The thought leader had already executed this task for them. The team members tried to discover additional information, especially about the KM offerings of other educational institutions. The reputation and visibility of the thought leader in the practitioner realm soothed most concerns by team members and permitted them to accept the information associated with KM as bona fide fact. The collaborative dialogue presented within the courses and seminars offered by the thought leader confirmed the team's confidence in his/her leadership and knowledge. Any anxiety, worry, or fears about the field of KM's changing landscape were not entertained for long. The thought leader had composed a strong representation of the elements and a stable conceptual framework for KM. Later some of the informants actually felt they understood KM and had been applying its principles throughout their work life.

Design Phase at C-2

The *design phase* at C-2 incorporated a lot of outside advice from practitioners who were invited to participate as Advisory Board members. These practitioners confirmed the lack of a definitive KM definition, an authoritative BOK, and a wide selection of self-proclaimed KM experts.

Discussion between the thought leader and the Deans at C-2, along with the faculty of the two schools, resulted in a decision to offer similar courses within the two concentrations for certain topics: Systems Analysis and Design and Database Management Systems. The respective schools chose to emphasize their School's perspective. Upper level electives, those that might emphasize the more theoretical aspects of KM, were excluded from the original offering because they appeared expensive to develop and would depend upon the availability of additional faculty and student demand.

Choice Phase at C-2

So the team endorsed their thought leader's qualifications and proceeded to the *choice phase*. Without the drive, passion, and interest of the thought leader wanting to build

his/her tenure portfolio and be a considerable asset to the University, the chances of an actual program would have been much less.

The team used the thought leader's material, with incremental additions, as a means to *simplify* the domain associated with KM. Based on the lack of a budget to invest in faculty lines and the constraint of experimenting with a certificate offering before the Master's degree, the thought leader *satisficed* the potential offering by creating three original courses he/she or an adjunct with KM experience could teach. Concurrently, he/she promoted the extension and reframing of some of the LIS School and Business School syllabi of other faculty members and advised them on the potential elements to include in their revised courses. This was certainly not an optimal offering, but it was satisfactory. Such an approach would allow the KM Centre/Center to build the incremental visibility and demand that would prove the value of a Master's degree. It is an approach, often combined with cross-listing of courses, which many schools currently offering KM have taken (Na-Lamphun & Lee, 2002; Sutton, 2002a).

Review Phase at C-2

As a result of my investigation, an informal *review phase* resulted in the documentation of best practices and lessons learned as a form of assessment. The team was both humble and proud of the considerable accomplishments they had achieved. Yes, there were missing topics and courses, but these could be filled in eventually as the program became profitable and new electives were commissioned. The previously published conceptual framework *simplified* the equivocality of KM and established the 'brand identity' at C-2 for a KM program built upon LIS School and Business School principles.

Summarization of Processes

In summary, new KM program development in these two cases appeared to follow a *typical* (traditional) educational program development process. There was nothing new or magic about KM that initially suggested that an *atypical* approach should have been considered. However, future institutions that consider the viability of developing a KM program will be faced with a different set of choices, circumstances, resources, and

subsequent courses of action. The conventional approach described here was expensive and time consuming. Future demand for KM programs may require a swifter response and a broader spectrum of course choices. Proposed critical choices associated with decision-making in KM programs would encompass the elements named in Appendix L, Table L-2.

These two cases demonstrated that the decision-makers tried to execute rational decisions within the bounds of their personal constraints, and the *decision premises* and embedded *decision routines* of the organization. In fact the strategic factors associated with the theory of *bounded rationality—satisficing and simplification*—were evident in the individual and organizational decisions at each institution.

Because of the limited capacity of an individual and the constraints on budgets and time, no one individual or institution can afford to consider all potential solution choices. Any decisions about the courses of action associated with an emergent field can result in a satisfactory decision, but the best or most optimal decision is impossible to predict. Until the emergent field of KM has stabilized further (assuming it ever does), then the complexion, flavour, and quality of KM education will rely upon particular institutional foci. The personalities and knowledge of the individual program designers and the instructors delivering the courses will determine the KM program content and value proposition to the learner.

6.6 Ad hoc LIS Relationship Query

6.6.1 Background to the Research Findings for Question S.4

In order to answer this question I need to describe whom I am speaking of when I say *librarians and information professionals*. I have assumed that library and information professionals include a broad spectrum of stakeholders. I included faculty, researchers, and professionals in academic programs with titles like:

- Information Schools (as the title has recently come into vogue),
- Information Studies,
- Library Science,

- Library and Information Science, and
- Library and Information Studies.

By asking as part of the question how these professionals should “*position their educational programs to appropriately include this new discipline of KM,*” I have presumed the professionals actually wanted to include KM within their programs of study. This is an important presumption, since there are many associations that welcome and include either librarians or information professionals, or both, within their membership ranks. Virtually all of these associations were marketing KM as a strategic and critical success factor to their mission. Table 6-2 is a compendium of such representative associations.

Acronym	Associations Accepting Library and Information Professionals
AIIM	The Enterprise Content Management Association
AIS	Association for Information Systems
AOM	Academy of Management
ALA	American Library Association
ALIA	Australian Library and Information Association
ALISE	Association for Library and Information Science Educators
ARMA	Association of Records Managers and Administrators
ASIST	American Society for Information Science and Technology
BAILER	British Association of Information and Library Education and Research
CAIS	Canadian Association for Information Science
CLA	Canadian Library Association
IFLA	International Federation of Library Associations and Institutions
IAI	Information Architecture Institute
ICRM	Institute of Certified Records Managers
IRMA	Information Resources Management Association
LIANZA	Library and Information Association New Zealand Aotearoa
MLA	Medical Library Association
SIM	Society for Information Managers
SLA	Special Libraries Association

Table 6-2 Representative Organizations Accepting Library and Information Professionals

I also included all faculty, researchers, and professionals in academic programs with titles like:

- Computer and Information Systems,
- Information Architecture,
- Information Engineering,
- Information Management,
- Information Resources,
- Information Resources Management,
- Information Systems,
- Management Information Systems, and
- Systems Engineering.

In addition, I incorporated all the graduates of these programs as well as anyone who has achieved a professional status in any of these areas of study through practice instead of a formal academic credentialing. I have purposefully excluded professionals in fields such as computer engineering, computer science, and computer systems.

6.6.2 Secondary Research Question S.4

How can librarians and information professionals position their educational programs to appropriately include this new discipline of KM?

Participation of the Chief Librarian at C-1

Now I will review information collected from the sites and respond to the research question. At C-1 the Chief Librarian was instrumental in raising interest in an emergent new field he/she had discovered. The Chief Librarian participated as a university program development team member and actively sought to incorporate LIS topics within the developing curriculum. The thought leader at C-1 had attempted to enlist an Advisory Board member from the faculty of a LIS School at another university in the State/Province. The thought leader, who may not have initially understood KM, did appreciate that KM should incorporate LIS topics, tools, and techniques. Regretfully, the invited faculty member showed no interest in responding.

Chaudhry, Al-Hawamdeh, Koenig, Rehman, and Srikantaiah, to name but a few, have been strong advocates for librarians and information professionals to take the lead in KM education and initiatives. Nonetheless, they have often described the poor track record

LIS professionals, especially faculty, have in trying to offer KM education. Koenig (2005, August 14–18) was quite strong in his admonitions at a recent IFLA conference when he said:

Despite the obvious overlap with librarianship, our field has done comparatively poorly on capitalizing on that overlap. The KM movement has gone through a number of stages, and it is now moving into a stage of recognizing the importance of and incorporating information and knowledge external to the parent organization. Such information and knowledge has always been the province of the librarian, and this development presents obvious and important opportunities for the field of librarianship, particularly in the area of the organization's KM system design....The consequence of these developments, is that the library community must actively promote itself in the knowledge management community, particularly in the corporate world. We can take advantage of this opportunity only if we take the initiative to involve ourselves in the planning and implementation of KM systems. (p. 1)

LIS professionals may wish to heed the suggestions of the Wingspread Group on Higher Education (1993). The Wingspread Group suggested that educational institutions must be accountable for the programs they deliver. In order to be accountable, the group proposed that leaders of these institutions, (and, by implication, the leaders of the institutions' educational programs), must build a dialogue with numerous constituencies who have a stake in the outcomes. Both cases demonstrated an almost Herculean effort in terms of dialogue, idea exchange, and knowledge sharing between large constituencies of stakeholders, including the students themselves. The findings illustrate how increased accountability for the multiple stakeholders and open dialogue could successfully be inculcated into the continuous improvement cycle for KM curriculum development.

Conception of the KM Program Began within the LIS School at C-2

At C-2 the program was conceived within a LIS School. In fact, the thought leader at C-2 was not only a LIS School faculty member but also a well-known KM practitioner. The thought leader proceeded in a low-key manner to build interest through dialogue, seminars, and introductory courses. He/she concentrated on incorporating members of the LIS School and the Business School, as well as the recently merged Computer and Information Systems School. His/her practitioner experience had previously proven that KM was multidisciplinary and interdisciplinary. This combination of schools and

faculties has previously been reported by Sutton (2002a) in less than 10 offerings globally, but also emphasized by numerous others as a critical success factor (Dalkir, 2005; Al-Hawamdeh, 2003, 2005; Srikantaiah, 2004; Ruth, Shaw & Frizzell, 2003; Saito, Machado, & Umemoto, 2004, November 10–12; Srikantaiah, 2000; Stankosky, 2005a).

Thus, the thought leader appeared to include the right stakeholders in the initiative. Once he/she had convinced the Deans in the LIS School and Business School to establish the KM Centre/Center, the thought leader built a team comprised of all relevant faculty to participate in the KM program design. The thought leader led the initiative because of his/her practitioner experience, reputation, and publications and convinced all parties that a shared degree would have more value than a degree offered separately by the schools.

Flavour of KM at C-1 and C-2

Finally, the flavour of KM at C-1 and C-2 differed primarily because of three factors. First, C-1 developed an original institution-specific conceptual framework, the constellation of course offerings were new and uniquely packaged, and the curriculum lacked some LIS-specific topics. Second, C-2 used an existing conceptual framework instead of inventing a new framework, extended a number of its LIS and Business courses instead of creating new courses, and offered more LIS-specific topics. Did these differences result in better or worse programs for C-2 compared to C-1? Overall I do not think so for a number of reasons, although my study is not a comparative evaluation of the two programs. C-1 and C-2 offered specific flavours of the multidisciplinary and interdisciplinary field of KM. A number of learners *satisfied* themselves with the learning outcomes for KM incorporated in each program, separately. The unique topic offerings comprised between 15% and 25% of the course material in each case. I do not believe the emerging field of KM suffered, and, in fact, I strongly suggest that KM may have been enhanced significantly by these offerings.

Of particular note in both cases was the entrepreneurial and innovative nature of the work. The mission and culture at C-1 was self-described as very entrepreneurial. At the same time, both institutions realized that they needed to be exceptionally innovative in

order to interest learners in this new, untested offering. The institutions also had to become aggressive in developing a program that would begin and stay ahead of their competitors. Most informants at both institutions were self-aware of their innovative opportunity. Yet, few informants used the word ‘innovative’ in their discussions with me, although many interpreted their work as ‘creative.’

A corollary question that is often asked among KM academics is: “*Where should the KM program be hosted within a school or faculty?*” From what we have learned in our two cases and the knowledge available in Rehman and Chaudhry (2005), Saito, Machado, & Umemoto, 2004, November 10–12), and Sutton (2002a) about the location of many KM offerings, the simple answer would appear to be: “*It doesn’t matter!*” A KM program, because of its multidisciplinary and interdisciplinary nature, can be located anywhere within an academic institution. Critical success factors for the program design and delivery team are adequate resources, passion, and commitment, coupled with a substantial dose of know-how about KM. The administrative problems associated with promotion and tenure for faculty within interdisciplinary KM programs appears to be a sticking point within each institution, and one solution might possibly be to draw upon successes within other interdisciplinary programs.

The Offering of KM Programs in Professional Associations

In fact, the current offering of KM program certification and credentialing by many of the new KM professional associations suggests that KM does not necessarily have to reside within the traditional university structure. Since some of the informants from the two cases suggested that the traditional university environment, by its very nature, may be an unsatisfactory location, then teaching the topics and subjects that comprise a KM program could realistically occur elsewhere. For example, certificates, degrees, or diplomas offered within corporate universities or professional associations appear to be not only a viable option, but possibly a more agile platform for delivery of an offering associated with an emerging field. Traditional academic institutions of higher learning do not have a monopoly on KM education.

Relationship of LIS to KM

LIS topics, per se, may not necessarily comprise the foundation of KM, but LIS certainly contributes to an understanding of the foundational principles of KM. Let's take an example from a recently published book by Dalkir (2005). Her book appears to have become a widely adopted monograph for a foundational text in KM, according to anecdotal evidence encountered at KM conferences and seminars.

Professor Dalkir currently teaches the KM concentration within the Graduate School of Library and Information Studies at McGill University in Montréal, QC, (Canada). She begins her introduction by highlighting the multidisciplinary and interdisciplinary nature of KM. Many of the diverse fields she outlines as comprising the field of KM include numerous Management and Business School topics—database management systems, decision support systems, IT, organizational science, and performance management systems. But her list does not stop there, and it further encompasses artificial intelligence, cognitive science, collaborative and web technologies, communications studies, document and content management systems, journalism and technical writing, LIS, and linguistics and computational linguistics.

Professor Dalkir has presented a tapestry of topics that are in no way weighted toward LIS, even though she is a faculty member of an LIS School. When she described the major KM life-cycle approaches, (i.e., Bukowitz and Williams, McElroy, Zack, and Wiig), none of the life-cycles were derived from the LIS discipline. Her LIS students, and those in other programs connected to LIS Schools, benefit immensely from the multidisciplinary nature of her book's content, as well as from her academic background in educational technology and her experience as a Director of KM practice in Fujitsu Corporation. As highlighted through the many authors mentioned in my Literature Review chapter, academics and practitioners within LIS and IS Schools are heavily influencing the future directions that may be taken within KM. LIS and IS faculty, practitioners, and researchers are in a unique position to co-lead the evolution in KM because of the foundational work in LIS around data, information, and knowledge organization.

6.7 Summary of Findings

Overall, CKC was a useful conceptual framework for framing and interpreting the results of these two cases. The conceptual framework integrated three information processes exhibited by a ‘Knowing Organization.’ It also facilitated my investigation of two academic institutions that developed unique, educational KM program offerings. The framework helped me to more deeply understand how organizations manipulated information and knowledge about KM to construct educational programs that taught KM.

What did Choo mean by ‘Knowing Organization’ when he proposed this term? He believed that a Knowing Organization holistically integrated three distinct and separate information processes to construct meaning, create knowledge, and make decisions. Choo (1998) proposed that the:

Knowing organization possesses information and knowledge so that it is well informed, mentally perceptive, and enlightened. Its actions are based on a shared and valid understanding of the organization’s environments and needs, and are leveraged by the available knowledge resources and skill competencies of its members. The knowing organization possesses information and knowledge that confers a special advantage, allowing it to maneuver with intelligence, creativity, and occasionally, cunning. (p. 4)

The cases studied in this investigation demonstrated how two ‘Knowing Organizations’ achieved the goal of constructing KM programs by means of an integrated framework of information processes. The two institutions and their members:

- adapted quickly and effectively to changes in the environment, even though their organizational processes presented numerous obstacles and challenges;
- exhibited many of the positive traits of learning organizations—self-learning, double loop learning, and unlearning, when necessary;
- acquired new knowledge and mobilized existing knowledge from its internal stakeholders and external Advisory Board members;
- creatively constructed an innovative delivery platform for educating future knowledge professionals; and
- *satisficed* and *simplified* a number of valuable courses of action from decision points presented during the conception, design, and development of the KM programs.

6.7.1 Summary of the Sensemaking Processes

In both cases I discovered a number of sensemaking tasks and activities that were executed by the thought leaders and the team members. These sensemaking tasks and activities appeared to be candidate critical success factors for completion of a KM program offering. In order to make sense of KM the thought leaders at both institutions:

- attended a KM conference to learn more about potential market interest;
- assembled expertise in curriculum design and development;
- constructed a multidisciplinary and interdisciplinary team;
- established a multi-pronged marketing strategy of offering a KM certificate/graduate diploma that fed the Master's programs;
- facilitated and negotiated with a community of key stakeholders from different professional schools;
- invited collaboration with external advisors possessing significant KM experience;
- passionately crafted the team into an active 'learning organization;'
- promoted an attitude of continuous improvement for program design; and
- spawned the development of competency and skills matrices to identify desired learning outcomes.

Each thought leader also accomplished a number of separate and distinct sensemaking tasks and activities:

- **C-1:**
 - sponsored a market research study to discern market demand,
 - developed a unique KM conceptual framework,
 - facilitated a *bottom-up approach* to: agreeing on the definition of KM and the structure and content of the KM framework, identifying candidate material for an *ad hoc* BOK, and leading the curriculum design and development processes, and
 - recruited a full-time KM Program Director.

- **C-2:**
 - launched an initial pilot suite of KM extended existing courses and seminars as a means to assess market demand,
 - spawned a KM Centre/Center as a point of focus for the KM offerings,
 - facilitated a *top-down approach* to identifying the definition of KM and the use of an existing KM framework, identifying candidate material for an *ad hoc* BOK, and leading the curriculum design and development processes,
 - selected the thought leader to be the KM Program Director.

In order to make sense of KM the team members at both institutions:

- collaborated closely with the thought leader to conceive, design, develop, and deliver a unique program offering;
- contributed significantly to the university's visibility and reputation in KM;
- embraced the characteristics of a 'learning organization' in order to create an intellectual foundation for designing the program;
- experienced an epiphany event that stimulated their passion for KM;
- relied upon internally established pedagogical program design processes; and
- remained steadfast in an atmosphere of doubt and disbelief by some of their colleagues.

The team members at C-1 synthesized their institutional experience in leadership and ecology with the new knowledge they learned about KM. The team members at C-2 worked together as key members of the different schools to establish a unique shared program.

The two institutions were *typical* organizations engaging their meager information resources and information processes through the conventional stages of program development. Through focus and perseverance, the two institutions contributed educational know-how to the learning associated with a new, emerging field—KM.

6.7.2 Summary of the Knowledge Creation Processes

The academic program designers at both institutions created, published, distributed, and retained a critical and useful *tacit* and *explicit* knowledge base. This informal BOK was

comprised of analogies and metaphors, best practices and lessons learned, documents, myths, narratives, and unique program offerings (curriculum and courses). The newly acquired knowledge had a critical impact upon the faculty and the students. Members at the two cases synthesized a provisional BOK from the reading lists and reference lists associated with the course syllabi.

The general learning outcomes proposed in the KM programs at C-1 and C-2 were itemized in Chapter 5 and will not be repeated here. C-1 proposed approximately 15 general learning outcomes, while C-2 proposed 12 general learning outcomes. The particular use of vocabulary within each institution presented an initial challenge in attempting to contrast and compare my interpretation of the titles and descriptions. When viewed very broadly it appeared that the general learning outcomes in both institutions could be loosely matched. When viewed narrowly, only between four and seven of the general learning outcomes appeared congruent across both programs, leaving C-1 with nine potentially unique general learning outcomes and C-2 with six potentially unique general learning outcomes.

Although each separate KM program was distinctive, the looser interpretations of the topics and subjects encompassed by the material appeared to be between 75% and 85% similar in the learning outcomes and course goals. Interestingly, during the design and development work neither institution referenced consultation with the other institution. From this we may infer they were unaware of the concurrent design and development underway at the other institution. The looser interpretation suggests that both cases may have developed separate, but similar, KM programs, independent of each other.

6.7.3 Summary of the Decision-Making Processes

Both institutions engaged *satisficing* and *simplification* techniques to approach their rational decision-making activities for architecting, constructing, and offering a KM program. Neither institution felt it had the budget or the resources to achieve the best or the most optimal solution for a KM program, and were *satisfied* to incorporate enhancements and refinements once the initial offering had been released. A variety of critical decision points were presented to the teams and subsequent courses of action

were selected, resulting in two unique, but similar, programs. Each KM program's content, learning outcomes, and goals could be interpreted as similar but unique. The choices required selections from a wide range of alternatives for the:

- admission requirements for evaluating student applicants,
- Advisory Board qualifications and candidate members,
- authoritative KM academics and practitioners,
- candidate BOK material,
- competencies and skills anticipated of a graduate,
- conceptual framework,
- course inclusions/exclusions for the initial offering,
- curricula components,
- curriculum and course learning outcomes,
- definitions,
- efficient and effective course delivery methods,
- elements of an advertising, marketing and sales campaign,
- methods, software applications, tools, and techniques incorporated into the courses,
- profile of target audience for the graduate degree, and
- qualifications, competencies, and skills of instructors.

6.7.4 Summary of LIS Relationship Query

Librarians and information professionals played a pivotal role in the decision-making processes at both institutions. At C-1 the Chief Librarian instigated the trigger question that launched the program activities, and continued to furnish advice during its design and development. At C-2 the presence of the thought leader as a new faculty member in the LIS School laid the foundation for the possibility and eventual reality of a shared KM program between the LIS and Business Schools. The participants at both institutions incorporated crossdisciplinary, interdisciplinary, and multidisciplinary elements in their design. The use of these terms may seem synonymous. Researchers have proposed crossdisciplinary, interdisciplinary, and multidisciplinary frameworks for the integrative elements of a KM program (Al-Hawamdeh, 2005; Koenig, 2004; Ponzi, 2002; Rehman & Chaudhry, 2005; Ruth, Shaw, & Frizzell, 2003; Srikantaiah, 2004; Stankosky, 2005a).

The next chapter will describe my conclusions, propose new questions for further research, and suggest a description of implications resulting from this investigation of KM programs.

7 Conclusions and Recommendations

7.1 Introduction

The emergent field of KM is broad, pervasive, multi-faceted, and is often described as interdisciplinary. A new-found interest in educating academics, practitioners, and professionals about KM has grown rapidly in the last decade as interest in the emerging knowledge economy and in KM itself has increased. Many institutions of higher learning and professional organizations are launching new KM programs to meet the demand in the marketplace for KM-related skills. A major challenge for KM programs is the heterogeneous mosaic of topics offered.

This study responded to the widespread need and call for research into KM (Bertels & Savage, 1998; von Krogh & Roos, 1996b; Liebowitz, Giles, Galvin, & Hluck, 1997; Venzin, von Krogh, & Roos, 1998; Wiig, 1994; Willinsky, 1999). The last few years has seen an increasing volume of publications and studies published. This new material has created a foundation for investigating KM programs, their courses, and the competencies and skills of prospective graduates. Seven years ago less than a handful of articles addressed the subject of designing and developing curricula to teach KM. Only one dissertation (completed in 1999) discussed the detailed experiences of the architects and designers who crafted a KM curriculum. Seven years later presentations on this topic are common at most academic KM conferences. Today a conservative estimate of articles, conference proceedings, and monographs published within this subject area would range from 100 to 150.

Chapter 1 introduced the issues and questions that led me to study a phenomenon like KM education. The purpose of this organizational study was primarily an investigation of the phenomenon of KM program design and development in the face of inconsistent, ambiguous, contradictory, and unavailable information about KM. The interest in KM education has increased during the last decade, possibly triggered by the concept of an emerging knowledge economy. This *exploratory* and *explanatory* investigation scrutinized two cases of graduate-level KM programs created in the year 2000.

Chapter 2 presented a literature review of the research, both direct and tangential, that influenced my investigation. The study of KM education was especially problematic since research on this topic was (and still is) in its infancy. Nonetheless, KM educational programs have become more visible and have reached a respectable threshold for further inquiry.

Chapter 3 discussed the paradigm and conceptual framework in which I situated a constructivist qualitative study for the purpose of my investigation. The conceptual framework for the study provided an interpretive structure for the data in terms of the historical sensemaking, knowledge creation, and decision-making processes.

Chapter 4 detailed the research approach and methodology used to meet with members of two graduate schools where KM programs had been developed. The research design incorporated case and grounded theory methods as the analytical approaches to collect and categorize data using a computer-based qualitative tool called NVivo. The two cases incorporated data derived from documentation and fifteen informant interviews—ranging from Deans and Directors to Advisory Board members and program support staff.

Chapter 5 organized and presented the detailed data collected from the two sites as cases according to the categories discovered during the grounded theory analysis. The two cases were formally and richly described in a manner that would facilitate cross-case comparison.

Chapter 6 discussed the overall findings of the two cases at a more abstract level and integrated the findings with the research literature and research questions that framed the study. A cross-case comparison of categories produced a description of similarities, differences, and synthesized results that added to the findings.

Chapter 7, this chapter, describes the research findings in terms of the research questions, proposes conclusions resulting from the investigation, delineates the potential impact of

the findings, outlines contributions to theory and methodology, summarizes the limitations of the study, and suggests recommendations for future research. It is also followed by a short Epilogue. This study has generated new questions for further exploration. As an *explanatory* study, my findings and conclusions furnished a solid foundation for understanding the processes within KM educational programs. Critical new avenues of inquiry surrounding the education of knowledge workers will be supported by this investigation.

7.2 Research Questions and the Study Findings

The research questions outlined previously in Chapter 1 (Table 1-1) were the catalyst for my *exploratory* and *explanatory* investigation. I interpreted the findings within the conceptual framework of Choo's *Knowing Cycle* (CKC) along with an *Ad hoc* question. I related the important findings directly to my research questions. The following subsections summarize the important findings described in Chapter 6 by grouping the responses to the research questions according to the CKC information processes.

7.2.1 CKC Sensemaking Processes

Research Question P.1

<p><i>How did the academic KM program designers make sense of the emerging field of KM in order to create a program for conveying learning about the phenomenon called "knowledge management"?</i></p>
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The institutions were confronted with an emerging field that lacked academic rigour, integrated inconsistent definitions and ambiguous conceptual frameworks, and encompassed pundits and experts with contradictory opinions. Through self-learning, motivation, passion, and perseverance, the thought leaders and team members of the two institutions made sense of the emerging field of KM. The discovery of the critical element of passion confirmed the recent work of Bennet's (2005) *Exploring Aspects of Knowledge Management that Contribute to the Passion Expressed by KM Thought Leaders*.

The thought leader at C-2 who was knowledgeable and experienced in the field of KM expended less time and effort in the sensemaking processes than the thought leader at C-1 who lacked a foundation in KM. The thought leader at C-2 educated team members and promoted the adoption of an existing KM definition and KM conceptual framework, as well as candidate BOK material. The thought leader at C-1 facilitated a learning experience about KM that expended more time and effort by his/her team to make sense of the elements of a KM curriculum. The passionate commitment of the thought leaders and team members in the face of an unstable emerging field was a critical success factor for completing the educational programs and translating them into graduate level offerings. Notwithstanding these similarities and differences, the two programs each required almost two years from their inception to launch because of other institutional constraints.

The KM programs were conceived from multiple perspectives: techno-centric, organizational-centric, people-centric, and process-centric. These perspectives reflected the fragmented nature of the KM field as well as the backgrounds and experiences of the thought leaders, team members, and Advisory Board members. The programs also reflected different underlying institutional strategies associated with the KM topic: a leadership and sustainability approach, a KM approach, a LIS approach, and a MBA approach with a KM concentration.

Different degree designations and credentialing were used to designate a KM graduate: MA, MBA, MLIS, and MS. This divergence appeared to be valuable at that time and reflected the cultural and andragogical diversity of the institutions offering KM programs. Additionally, KM certificates or diplomas were created to appeal as a flexible stepping stone for some students to incrementally work toward a professional Master's degree.

The KM curriculum design at the two institutions incorporated the phases and stages of a *typical* approach to program design. This is confirmed by Wallace's (1999) study on KM curriculum planning in the Faculty of Information Studies at the University of Toronto. The two institutions adopted approaches that were congruent with widely accepted

frameworks for curriculum development (Boyatzis, Cowen, Kolb, & Associates, 1995; Diamond, 1989; Dressel, 1971; Maestra, 1996; Posner, 1988).

7.2.2 CKC Knowledge Creation Processes

Research Question S.1

What new knowledge may have been created about KM through the program conception, design, and development processes?

The academic program designers at both institutions created, published, distributed, and retained a critical and useful internal knowledge base. The *tacit* and *explicit* knowledge base encompassed information about Advisory Board members' expertise, candidate BOK material (bibliographies), conceptual frameworks, conference proceedings and presentations, courses, curricula elements, definitions, pundits, learning outcomes, meeting agendas and minutes, program design and development processes, and tools and applications. At the time of their inception, both programs would have been considered 'leading edge'—ahead of their time. Thus, neither institution had much of an opportunity to capitalize upon previous knowledge about KM program design and development, which was virtually unavailable. Neither university appeared to have been aware of the other university's KM initiative during the design and development stages.

Elements of KM curricula were discovered and synthesized during the analysis and interpretation stages of the study. Table 7-1 outlines the provisional elements of KM curricula described in previous chapters.

Research Question S.2

What general learning outcomes were proposed in the KM programs under study to convey learning about KM?

At C-1 there were 15 distinct general learning outcomes derived from document artifacts, while at C-2 there were 10 general learning outcomes discovered in the document artifacts. When viewed broadly the general learning outcomes at both institutions were relatively similar. When viewed narrowly, only 33% of C-1's general learning outcomes were interpreted as similar to 50% of C-2's general learning outcomes. The particular use

of vocabulary within each institution presented a challenge in attempting to contrast and compare the learning outcomes. The separate curricula exhibited both heterogeneous and homogenous characteristics in the course topics and learning outcomes, but the heterogeneous nature of the programs appeared to prevail.

No.	KM Curriculum Element	Reference in Dissertation
1	Body of Knowledge	Chapter 5, Table 5-2
2	Conceptual Framework	Chapter 5, Section 5.3.6 Chapter 6, Section 6.4.1
3	Courses	Chapter 5, Tables 5-3 and 5-4 Chapter 6, Section 6.4.1 (Appendix I)
4	Definition	Chapter 5, Section 5.3.5 Chapter 6, Section 6.4.1
5	Learning Outcomes	Chapter 5, Tables 5-5 through 5-8 Chapter 6, Section 6.4.2 (Appendix J)
6	Responsibility & Position Summary	Chapter 6, Section 6.4.2 (Appendix K)

Table 7-1 Provisional Elements of KM Curricula

7.2.3 CKC Decision-Making Processes

Research Question S.3

How has the new knowledge created about KM contributed to the decision-making process for new program development?

The trigger event for a KM program at both institutions was a business driver to generate additional revenue by creating a unique, innovative educational offering. The new educational programs were envisioned to appeal to the knowledge workers and professionals involved in the high-tech industry before the advent of the *dot-com* bust of 1999. Initial market research and attendance at KM conferences confirmed that there appeared to be a viable market for KM education. Both institutions continued their program's development in spite of the *dot-com* fiasco, hoping the perceived market demand would still be quite high in the workplace. Both institutions emphasized that a critical success factor for program sustainability was a concerted marketing and sales campaign, tapping both conventional advertising channels and internet website marketing venues.

The teams chose courses of action based upon a variety of critical decision points, as outlined in Chapter 6, Section 6.5.1. The decisions resulted in two unique KM educational programs. Both institutions seemed to approach their decision-making activities by means of *satisficing* and *simplification* techniques. The leaders and members lacked the budget and resources to achieve the best or the most optimal solution for a KM program. The participants were *satisfied* with the incorporation of enhancements and refinements later, once the initial offering had been released and demonstrated a profit.

The institutional charters and governance models (public vs. private) affected the time and effort expended to achieve endorsement of the internal/external Approval Body. The location of the Approval Body (of the two cases studied, one was internal, the other external) also affected the transparency of the evaluation criteria used by the Approval Body members for proposal and program approval and, thus, the time required to obtain approval.

7.2.4 Ad hoc LIS Relationship Question

Research Question S.4

How can librarians and information professionals position their educational programs to appropriately include this emerging field of KM?

The participants at both institutions chose to incorporate crossdisciplinary, interdisciplinary, and multi-disciplinary elements into their designs. Although these terms may seem synonymous, other researchers have also proposed crossdisciplinary, interdisciplinary, and multi-disciplinary frameworks for the integrative elements of a KM program (Al-Hawamdeh, 2005; Koenig, 2004; Ponzi, 2004; Rehman & Chaudhry, 2005; Ruth, Shaw, & Frizzell, 2003; Srikantaiah, 2004; Stankosky, 2005).

7.3 Significance of the Research Findings

I executed a complementary study that did not duplicate known research initiatives in KM education. I explored the phenomenon of KM educational program design and development in terms of a conceptual framework consisting of sensemaking, knowledge

creation, and decision-making processes. I provided an explanation of what went on within KM program design and development processes. I contributed critical new knowledge about KM in terms of a provisional BOK, conceptual frameworks, courses, definitions, a KM position summary, and learning outcomes. I also provided explanations for individual, group, and, to some extent, organizational behaviours that took place at the institutions.

This investigation is a significant contribution to understanding KM education, where very little has been known about the processes surrounding KM curricula design and development. Underlying barriers, best practices, concerns, issues, lessons learned, problems, solutions, and triggers have been exposed for further research. All of these points, coupled with a highly credible research design, illustrate the merit, worth, and sustainable value of this original study.

7.4 Contributions to Theory and Methodology

Methodologically the use of case and grounded theory methods reaffirmed the value of these two qualitative approaches for data collection, analysis, and presentation of results. The investigation of only one case of a KM program at an academic institution would have been sufficient for grounded theory analysis. However, the resulting cross-case analysis significantly increased the value of the findings and conclusions by highlighting distinctions between the cases.

Very rich pictures of the two in-depth cases substantiated the value of CKC and Choo's perspective on *Knowing Organizations*. The concepts in the CKC have surfaced in other research as a more intense area of study (Bennet & Bennet, 2004; Blackler, 1995; Edvisson & Malone, 1997; Spender & Grant, 1996; Sveiby, 1994, 1997).

The CKC information processes also provided an overarching framework for sequencing, grouping, and presenting the findings. Interpreting the data through Weick's *sensemaking model*, Nonaka and Takeuchi's *knowledge conversion model*, and March and Simon's *bounded rationality model* focused the insights available from the voluminous data in the

interviews and document artifacts. Although no new theory, *per se*, emerged from the analysis, the findings and conclusions point to valuable directions for new research.

7.5 Limitations of the Study

The findings of an *exploratory* study may “seldom provide satisfactory answers to research questions, though they can hint at answers and give insights into the research methods that could provide definitive answers” (Babbie, 1999, p. 73). My investigation contained a number of limitations that were previously described in detail in Chapter 4, Sections 4.6 and 4.7. To summarize, the limitations encompassed:

1. the strict requirement of anonymity, confidentiality, and privacy by participating institutions;
2. the deficiencies associated with oral memories of the experiences;
3. the scarcity of documents and documentation, and some restrictions with the publication of their contents;
4. practical restrictions on the volume and availability of volunteer informants;
5. challenges of higher level abstraction in the categorization activities associated with grounded theory analysis; and
6. an inability to easily generalize results due to the inductive nature of the study.

However, none of these limitations curtailed the richness of the data collected or constrained the interpretation through the overriding conceptual framework.

7.6 Conclusions

Many researchers, including myself, may feel uncomfortable when we find ourselves in the midst of a *post modern* experience where we cannot easily define, describe, or frame a phenomenon—tame it, so to speak. Often many of us may feel the need to formally identify the boundaries of a complex phenomenon before we organize an educational program in order to teach it to students or colleagues. Both institutions took considerable risks in spearheading new KM educational programs that were triggered by the need to generate additional institutional revenue. Anyone involved in KM educational program design may wish to take solace in the complex adaptive system experiences circumscribed by these two cases (Cyert & March, 1963).

Deep knowledge about KM was not a critical success factor for architecting and constructing a KM program, although such knowledge may eventually be critical for sustaining such a program. The identification of formal boundaries for the field of KM was not intrinsic to the conception, design, and delivery of KM educational programs. Incomplete, imperfect, and inconsistent information about KM was not a barrier to completing the programs. The members of both organizations learned about KM and developed interpretations of KM while coping with ambiguous information that they incorporated into curricula elements for teaching KM (March & Olsen, 1979). Consequently, the KM programs represented heterogeneous course offerings, with some areas of commonality. The capability to create two distinct offerings appeared to be a consequence of organizational behaviour and implicit organizational learning that evolved at each institution (March & Simon, 1958).

The institutions were able to establish their KM programs because of:

- passionate and informed leaders and team members (Bennet, 2005);
- group and personal agility and self-learning (Simon, 1981);
- innovative and creative curricula; and
- courses of action that relied upon *satisficing* and *simplicity* (Simon, 1957).

March and Olsen (1979) established that decision-making within universities is not always characterized by optimal use of information and consensus building, and that universities *satisfice* decision-making rather than optimize it. This study suggested a contrary perspective to March and Olsen's (1979) first finding in that the thought leaders and team members in the two cases actually tried to make optimal use of the information available about KM and worked hard to build consensus amongst the different stakeholders. Nonetheless, the study did confirm the *satisficing* element in the decision-making processes in the two cases.

Librarians and information professionals played a pivotal role in the sensemaking, knowledge creation, and decision-making processes at both institutions. At C-1 the Chief Librarian instigated the trigger question that launched the program activities, and continued to furnish advice during its design and development. At C-2 the presence of an

academically qualified LIS thought leader with KM practitioner experience as a new faculty member in the LIS School laid the foundation for a KM program shared between the LIS and Business schools.

Within the experiences represented by these two cases, KM did not exhibit the characteristics of a mature field or discipline to the participants. In 2007, almost a decade after the programs were conceived, KM is still an emerging field, albeit, one with a critical mass of increasingly credible research and practice. Since KM does not yet naturally fit into Arts, Sciences, Social Sciences, Business, LIS, or any other specific domain, KM programs will continue be offered and taught from a number of different curricula and also offered in various colleges, schools, faculties, and departments (Sutton, 2002a, 2004).

7.7 Implications

This study contributed to the definitional and conceptual debate surrounding KM education as well as the field of KM itself. Both universities exhibited innovation and creativity in identifying what constituted provisional BOKs, definitions, conceptual frameworks, learning outcomes, and courses comprising the curricula. However, a sufficient difference in foundational concepts existed between the two KM programs to make them unique. This distinction appeared to depend upon the culture of the institution, originating department within the institution where the programs resided, the impetus of a strong thought leader, and the ideology and andragogical backgrounds of the designers.

7.7.1 Interdisciplinary Approach

At the very least, leaders of LIS, Business, and Management Schools could benefit significantly from this study if they wished to reduce the “time, effort, and cost to market” of a KM course, concentration, or interdisciplinary program. I hazard to predict that KM education could emerge as a dominant KM sub-theme, especially since corporate universities are beginning to take a more active interest in “organizational learning” as a strategic corporate initiative.

The OECD was an early leader and staunch supporter of the study of KM and its relationship to education (CERI/OECD, 2000; OECD, 2000, 2003a). KM education received another boost in visibility and credibility with the recent release of the study *European Curriculum Reflections on Library and Information Science Education* (Royal School of Library and Information Science, 2005). This landmark project confirmed the criticality of KM to LIS educational programs in Europe. In the survey of 50 English-language LIS schools, 86% indicated that KM was an element of their curriculum. The general conclusion was that KM education was an integral part of IM programs in European LIS schools, with very few concentrations specifically in KM: “The analysis of knowledge management program descriptions generated 64 different topics with almost no overlaps between the programs examined, which means that knowledge management is covering nearly everything or nothing” (Lørring, 2007, p. 19). Specifically KM was viewed as an interdisciplinary and crossdisciplinary field where additional cooperation between other academic departments, the private sector, and the public sector was recommended.

7.7.2 New University Business Models and KM Tools

There is a growing interest within the KM literature into how educational institutions can engage the field of KM as part of the strategy for increasing efficiency and effectiveness of the university itself (Fuller, 2003; Sousa & Hendriks, 2006). New business models for university structures are materializing because of shifting and decreasing public funding sources. These two cases demonstrated that academic units can use limited budgets and very basic KM tools, methods, and information technology to achieve critical program development goals. Of course, there are opportunities for improvement. KM tools have become a common nexus for collaboration, document sharing, and storage in many academic and corporate environments during the last decade. These tools did not exist or were in their infancy between 1997 and 2002. Such tools could prove integral to developing new KM programs, and deserve additional study in such a context.

7.7.3 Competition vs. Collaboration and Cooperation

Due to the competitive nature of KM programs, the new knowledge created within these two cases about KM program design and development has only been available

informally. Other institutions embarking upon the design and development of KM educational programs may likely have experienced very similar time, budget, and human resource intensive processes while architecting their own new programs. A formal shared knowledge repository containing detailed elements of different KM programs would be advantageous to new KM program designers.

Librarians and information professionals continue to struggle to identify where their future lies as a profession. Librarians and information professionals have been historically rooted in the areas of information and knowledge organization, storage, access, representation, and archiving. Librarians and information professionals are poised to have a critical impact on the development of KM programs, but the impact will depend upon LIS professionals developing more assertive, innovative, and entrepreneurial approaches to the integrative nature of KM within the LIS field.

Many organizations and institutions continue to question the value and relevance of librarians when tools like *Google* mesmerize user communities and various information publics. Librarians and information professionals who choose not to integrate and incorporate KM as a critical element of their LIS programs may ultimately regret how they lost an opportunity to lead, architect, and sustain KM programs. Librarians and information professionals might significantly benefit from building additional relationships with external stakeholders whose business is KM, and from constructing interdisciplinary KM programs with other departments and schools.

7.7.4 Relationship of KM Education to the Field of Education

In situating this study within the field of Education, we may wish to reflect upon the current academic trends and issues discussed often in the higher education literature. Considerable discussion and debate surrounds the commoditization of educational offerings, credentialing of professionals, market demand for educational specialization, and the impact of consumerism on learning (Duderstadt & Womack, 2004; Gold, Rodgers, & Smith, 2001; Hayes & Wynyard, 2002; Naidoo, 2003; Naidoo & Jamieson, 2005; Oblinger & Verville, 1998). The institutional cases were triggered by a drive for revenue generation within the emergence of a new profession derived from business,

IT/IS, LIS, and management. Advisory Board and team members, acting as proxies for employers, tried to anticipate the commodity value of KM skills within an applied graduate educational program. The curricula evolved as an apparent response to perceived consumer and employer market demand. All of these trends taken together could suggest that KM education fits into an evolving trend in adult learner/life long learner education, as described by OECD (2001a). Moreover, the demand for knowledge champions in the field of education has already increased (Sallis & Jones, 2002).

7.8 Recommendations for Future Research

First and foremost, any future research on KM education should encompass academic institutions as well as corporate universities and professional associations offering KM training and certification. The teaching of KM can occur in many locales not directly connected to the academy. An investigation should be initiated at the beginning of the inception of a KM program, (similar to the Wallace's 1999 study at the University of Toronto). Then an ethnographic approach could be used to capture more detailed and comprehensive data, rather than trying to harvest data from the memories of the participants after the fact. The various types of educational offerings beg a number of important questions about KM education that could spawn future research:

- 1) What courses comprise different types of KM program offerings?
- 2) What do these programs offer the “knowledge worker” in terms of program goals, course objectives, and learning outcomes?
- 3) Who offers the different types of KM programs?
- 4) How do other fields and disciplines teach KM (learning outcomes, topics/subjects covered, bibliographies, etc.)? Why is KM considered important enough to be taught within this other fields or disciplines?
- 5) What are the tuition costs, course costs, equipment costs, and others expenses a student can expect to incur for different types of KM program offerings?
- 6) What types of certificates, diplomas, and degrees are offered?
- 7) How can program success be determined? Are there assessment criteria that could be applied to the evaluation of all types of programs?
- 8) What are the competencies and skills anticipated in the graduates from different KM programs? Can competency be assessed?

- 9) What is the affect of different instructional strategies (e.g., case studies, class exercises, research reports, simulations, team projects) and delivery media (e.g., traditional classroom lectures, seminars, distance education, web-based learning modules) on KM learners?
- 10) Does innovation and creativity in program design and development differ between public and private institutions?
- 11) How did instructors in these other fields and disciplines make sense of KM in order to integrate KM into their curricula or courses?

Second, the students who enroll in a KM program appear to comprise a rather ‘motley crew’ of architects, computer programmers, financial managers, health professionals, historians, information architects, journalists, librarians, managers, marketing and communications professionals, philosophers, psychologists, systems analysts, and web designers, to name but a few associated professions and occupations. This broad spectrum of interested students and candidate graduates certainly alludes to the interdisciplinary nature of KM, but also suggests some other avenues for research and inquiry:

- 1) What triggers an interest in learning KM for each student? What attracted the student to choose a KM degree or credential at a particular institution?
- 2) What is the attrition rate in KM programs? Do all registrants finally graduate?
- 3) What were the ethnic, gender, and socioeconomic backgrounds of students in KM programs? Do these affect enrollment? Are scholarships available to increase the diversity associated with KM programs?
- 4) What were the expectations of the student when he/she entered a KM program? Were these satisfied by the content and delivery of the program by the time the student graduated?
- 5) How many Master’s theses and PhD dissertations have been published since 1985 predominately covering KM-related topics? Is there any significance in the trends exhibited by the titles, content, and citations?

- 6) What kind of jobs/careers are KM graduates finding once they graduate? What were the salaries of graduates? What types of employers are hiring KM graduates?
- 7) Are mentoring or coaching programs for new KM graduates available from the educational institutions or within their workplace? How effective are they?

Third, some librarians, information professionals, and LIS leaders have begun to address the challenges associated with educating KM professionals. They should continue to build strong, proactive, and sustainable social networks that bridge the interdisciplinary domains and practice areas comprising KM. The UK Department for Education and Skills (2003) in *Future of Higher Education* identified increased partnerships between business and universities as the critical success factors in helping to fill the gap in knowledge-worker competencies and skills.

Establishing a KM Educational Framework and Repository for sharing KM program elements through a LIS-based association of academics, instructors, and practitioners would create a focal point for KM within the LIS field. KM educational expertise and knowledge, along with syllabi, instructional methods, best practices, and lessons learned about KM programs, should be shared to increase their value. Regardless of the competitive nature of KM programs, hoarding such information and knowledge will hold back the availability of high quality KM education because of the incredible amount of expensive rework. The intellectual and business value propositions for KM educational information should be demonstrated in its reuse and extension, instead of expensive duplication of efforts.

Fourth, librarians and information professionals should actively embrace and become experts in the integration of appropriate IT/IM/KM applications and tools with KM initiatives and knowledge work to increase the viability of KM courses. Students enrolled in a KM program do not tolerate instructors who lack pragmatic and practical experience in the field of KM, even in theoretical courses (Whitman, 2003). These students demand practical working knowledge about KM.

Fifth, university-based KM degree programs, by their very nature, require much more time to change, and may not survive unless they build strategic partnerships with private sector institutions and professional associations offering KM credentialing. Certain corporate universities are emerging in the marketplace as distributors of distance-based educational degrees in KM. Since they are profit-driven and more agile than academic institutions, they represent a capability to cope more quickly with relevant offerings for the changing workplace needs associated with KM. Such an alliance might provide KM learners with the best of both worlds: an academic *and* a corporate grounding in KM—a powerful combination in the emerging marketplaces of the knowledge economy.

Finally, Cohen, March, and Olsen (1976) referred to universities as “one class of organizations which faces decision situations involving unclear goals, unclear technology, and fluid participants” (p. 11), when describing their *Garbage Can Model* for decision-making. Their approach suggested that decision environments exhibited significant characteristics of uncertainty, ambiguity, and contradiction that could trigger courses of action that might appear “irrational.” Using the *Rational Model*, Cyert and March (1963) and March and Olsen (1979) also reinforced the notion that organizations are constantly challenged by the impact of ambiguity on decision-making.

A future study of the design and development of a KM program should incorporate the *Garbage Can Model* as the decision-making theory within the CKC framework instead of the *Rational Model*. This would provide an opportunity to contrast two different theories of decision-making within the CKC framework. Such an investigation might support the advantages of one model over the other within the context of academic and corporate universities offering KM programs.

7.9 Epilogue

The emergence of the field of KM is not dissimilar to the birth of human flight, the eventual development of the field of aeronautics, and the impact of aerodynamics, engineering, mathematics, and physics on the emerging field of space science. The Wright Brothers, along with many other early pioneers in machine and human flight, had

an appreciation (but little in-depth knowledge) of the underlying principles and foundational disciplines that contributed to the design of early flying machines. After many prototypes, models, and sometimes catastrophic failures, these pioneers settled on certain characteristics that helped their flying machines take off, stay aloft, and land safely.

Eventually, chemists, engineers, mathematicians, and physicists from other fields specialized in the budding study of aerodynamics. They worked very hard at experiments that helped them make sense of particular designs. They were able to eventually discern efficient and effective approaches to wing design, payload delivery, and guidance systems. Eventually, improvements were devised and a greater visibility and recognition was attributed to the maturing field of aeronautics, and consequently, space science.

Overall design processes in aeronautics and space science took at least 100 years to reach a threshold of maturity where flying became a major and safe mode of transportation. Yet, even today new problems and challenges are continuing to be uncovered in space flight as a new space science capitalizes on the pioneering work in aerodynamics. Scientists continue to integrate new frameworks, methods, models, techniques, and theories from many other fields into the foundations for space science theory. Over time, more research, theories, and tools have increased the stability of space science.

Similarly, professionals, practitioners, and researchers in KM are capitalizing on the research and theory from many other fields. Elements from others fields and disciplines are being incorporated into an integrated whole that is often identified by the label *knowledge management*. Aeronautics and space science were not taught without first instilling in students an appreciation and understanding of the foundational fields that contributed significantly to these emerging fields. KM professionals cannot be educated in a vacuum either. They will come from various backgrounds and educational experiences to learn about knowledge and how it might be managed.

KM was occurring long before Marchand and Wiig coined the term *knowledge management* in 1985 and 1987, respectively. Whatever it was called before the acronym KM came into common usage, we are only now coming to grips with many of the new concepts, definitions, frameworks, methods, models, and ongoing research resulting from the more detailed study of KM. Although many agree that KM is a terrible moniker for this new field, KM educational programs will continue to be created and launched because KM is pervasive, KM is continually evolving, and KM continues to penetrate new areas of inquiry and research.

Knowledge has emerged as a new commodity and a potential currency to explain new economic theory and stimulate the economic engines of many nations. The KM programs in this study tried to anticipate the demand for professionals in a specialty associated with the new knowledge economy. I was privileged to participate as an investigator in what was to me a 'once in a lifetime opportunity.' I am very grateful for the experience and opportunity facilitated by the two institutions I studied. Only the future will permit a more definitive historical assessment, but there is a very high probability that the foresight and actions of these two institutions actually contributed to stabilizing and further refining the emerging field of Knowledge Management.

I would like to end this work with a quote suggesting the future of KM (The Conference Board & Hackett, 2000). Business is not the only place KM could work. The economic sectors encompassing education, government, and non-profit organizations are also part of this future vision:

KM should become an integral part of business relationships. KM offers a set of tools and the opportunity to support the reworking of processes, yet the greatest benefits promised by KM come as innovation and creativity. Theoretically, KM is a great accelerator of innovation and creativity; but in practice most KM projects are still conservative and focused on inefficiencies. The integration of OL and KM is needed to break the old rules, "unlearn" outdated business models, and achieve breakthroughs.

The tools and experience base are at hand. Perhaps what is needed now is better management of KM itself and applying the lessons learned to move to the next level, using the resources of the enterprise and KM tools and techniques to create new capabilities and deliver business value that has not yet been defined. (p. 57)

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¹⁴ Bibliography formatted according to APA, 5th edition (with a minor modification of Title case in the title field).

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APPENDICES

APPENDIX A – BACKGROUND EXAMINATION OF THE LITERATURE

This background examination of the literature provides an introduction to the KM field and describes various perspectives. This appendix covers the topical areas:

- Knowledge Economy—the emergent economic perspective;
- Knowledge Management—a new, emerging field vs. a new discipline perspective;
- Knowledge Management at work—the practitioner and management perspectives;
- Knowledge Management and Organizational Learning—a complimentary perspective; and
- Knowledge Management and Complex Systems—a symbiotic perspective.

A.1 Knowledge Economy—the Emergent Economic Perspective

A.1.1 Knowledge Economy—the New Source of Wealth

Why is knowledge considered a new source of wealth? Why is the economic stewardship and control of knowledge considered so important today? Both questions relate to a global perception that knowledge is the new currency of an emerging economic order.

This paradigm had its roots in the work of Peter Drucker (1959), who typified the knowledge worker in *Landmarks of Tomorrow: A Report on the New 'Post-Modern' World* as an individual who spends much of his/her time processing symbols with the intellect, not manufacturing anything with the hands. Other authorities expanded upon the knowledge industry and post-industrial economic concepts, as expressed in the seminal works of Fritz Machlup (1962, 1980), Daniel Bell (1973), Manuel Castells (1996, 1997, 1998), Manfred Kochen (1967, 1975, 1979, 1988), and most recently Nico Stehr (2002).

Drucker (1995) in his later book *Managing in a Time of Change* proposed that:

“acquiring and applying knowledge will increasingly become the key competitive factor—for career and earnings opportunities for individuals; for the performance, perhaps even the survival of the individual organization; for an industry; and for a country” (p. 236). Halal (1996) extended this by introducing the new job role of the knowledge entrepreneur that would eventually replace service and factory workers.

Through his insightful vision, Drucker (1991) furnished western nations, and more recently all global nations, with a foretaste of the emerging knowledge economy and the foundation for a new measure of productivity. Economists, similar in nature to individuals involved with knowledge management, use a wide range of disparate definitions to describe the emerging knowledge economy. William Horton (2001), a knowledge management expert and organizational learning pundit, proposed a very simple definition, which is useful for starting the discussion of the knowledge economy: “A knowledge economy [is] one where success depends more on knowledge than on labor and capital. ... It is the unique knowledge of the company that is most important in determining its success. ... Knowledge in many ways is the new gold standard” (p. 6–7).

Swenson (1998) in *Information /Knowledge Management: A Current Review* cites a number of experts who have contributed data and propositions about the knowledge economy and the promotion, acceptance, and inculcation of the KM worker:

The term, "knowledge worker," was coined less than 40 years ago by Drucker (1959), when he predicted the rise of a knowledge class. More recently, Robert Reich, in *The Work of Nations* (1991) identified three broad groups of emerging workers: routine production workers, in-person services, and particularly symbolic-analytic services. The latter (knowledge workers) identify and solve problems and broker solutions by manipulating symbols, represent complex reality into simpler and more manageable models, and communicate these to other specialists who apply them. In the 1950s when Drucker first proposed the idea, these knowledge workers only comprised about 8% of the workforce. By the early to mid-1990s the proportion of the workforce who were knowledge workers were [sic] estimated to be about 40% (Aley & Urresta, 1995); by the year 2000, it is estimated that 85% of all jobs in America and 80% of jobs in Europe will be knowledge based (Quinn, Anderson, & Finkelstein, 1997); and by 2015 the number may rise to 90% (Rich, 1996). (The Knowledge Revolution and Knowledge Workers, ¶ 4)

A variety of practitioners have forecast that the competitiveness of organizations will increasingly depend upon carefully exploiting the new strategic potentials of better-managed knowledge or have reported cases that support their proposition (Adler, 2002; Alvesson, 1995; Amidon, 1998; Davenport, 1997; Beijerse, 1999; de la Mothe, et al., 2000; Earl & Statistics Canada, 2002; Edvinsson, 2002; Foray, 2001; Sveiby, 1997; Wiig, 1993).

Such assertions by practitioners alone would be insufficient to legitimize such a revolutionary term as knowledge economy, especially since we are supposedly in the midst of the information economy and on the trailing edge of the nuclear economy. The economies in the western nations today certainly reflect the move away from agrarian economies and the diminishing importance of industrial economies, but can all these economies co-exist? The short answer is “Yes.” But the knowledge economy appears to be quickly eclipsing these parallel economic models that have relied heavily on agriculture, industrialization, manufacturing, and nuclear power.

A.1.2 The New Economics of Knowledge

In *The Economics of Knowledge* Foray (2004) suggested that the global shifts in investments and activities associated with knowledge-intensive firms were causing radical economic changes. Delanty (2003) even suggested that the changes were the result of far-reaching cultural shifts associated with the dangerous adoption of new ideologies:

- *postmodernism* “the notion that politics can be based upon a founding idea,” (p. 73);
- *neo-liberalism* “seeking to reconstruct society in the image of a political doctrine ... [consisting] only [of] markets and individual consumers,” (p. 75); and
- *third wayism* “people can shape their life projects by access to knowledge and that the developments in the knowledge economy are generally empowering.” (p. 75–76)

Delanty claimed that these three ideologies were critically impacting higher education, creating numerous cultural contradictions (p. 77):

- the contradiction of teaching and research;
- the contradiction of efficiency and scholarship;
- the contradiction of massification and democratisation;
- the contradiction of management and leadership;
- the contradiction of opinion and knowledge; and
- the contradiction of science and technology.

Delanty purported that these cultural contradictions were diminishing the role and value of the university—traditional knowledge creators and producers—during a period when knowledge was becoming the foundation for the new economy. The alterations taking

place, coupled with the increased velocity in the technological production, reproduction, consumption, recycling, and distribution of information and knowledge was triggering the new, emerging knowledge economy (Neef, Siesfeld, & Cefola, 1998).

A.1.3 Knowledge as a Public Good

Foray and Delanty were not alone in their hypotheses. Dr. Steve Fuller, a noted social epistemologist, ruminated over the dilemma of identifying private and public goods represented by knowledge, as in, for example, patents, trademarks, and intellectual property. Fuller (2002b) proposed that “a public good can be understood as a collectively defined product whose use is defined distributively” (p. 29). For example, he suggested that a village commons is a public good because the villagers were compelled to maintain it so that anyone could access it, yet no two individuals could graze their sheep on the commons at the same time because of the constraints of time and space, and overuse would mean fewer benefits for the villagers who accessed the commons. Fuller (2005) further suggested in *What Makes Universities Unique? Updating the Ideal for the Entrepreneurial Age* that universities should embrace the strategy to manufacture knowledge as a public good within an entrepreneurial business model.

On the other hand, others believe that knowledge (as a good) increases in value as it is used and reused by an escalating volume of ‘consumers’—infinite expansibility (Quah, 1999). Knowledge can exist in more than one place at the same time without diluting its worth. In fact, as knowledge is shared and reproduced it generates other new knowledge, innovations, and intangible creative results expressed as globalization (Correia & Sarmiento, 2005; Kenney, 1996; Rothberg & Erickson, 2005). Its overall value may dramatically increase, as we have witnessed with firms like Microsoft and Google. Thus, knowledge is being increasingly perceived as a new private good and the basis for new wealth generation. This emergent currency has created dramatic dislocations within many national economies that had previously relied upon industrial goods and services as the measure of wealth and success, e.g., the significant outsourcing of manufacturing facilities and call centres that has taken place in the USA over the last decade.

Cross and Israelit (2000) and Burton-Jones (2003) asserted that the dislocation taking place provided new opportunities to increase business performance by fostering learning within organizations at the individual, group, and enterprise levels. An organization that builds a culture based upon learning will generate new knowledge, innovation, and creativity that can result in new core competencies for the affected knowledge workers. Errors and mistakes are embraced as experiential learning that produces lessons learned and best practices—knowledge that can be recycled to increase the wealth and performance of the overall enterprise, not a drain on the bottom line. Neef (1999) summed this up by describing how KM is a consequence as well as the enabler of the knowledge economy:

[Knowledge Management] is a critical set of policies and practices that will boost an organization's competitive position in the new knowledge-based economy by optimizing the collaboration and knowledge sharing among employees and providing them with the information and knowledge that they need to improve operational efficiency, to innovate, and to sense and respond to new opportunities in the marketplace. (p. 78)

A.1.4 Effect of the Knowledge Economy on Economic Development and Education

In the *Economic Impact of ICT: Measurement, Evidence, and Implications*, the OECD (2004a) described the cause–effect relationships of Information, Communications and Technologies (ICT) investments, production, and use in OECD countries. The impacts occurred at an individual level as well as an aggregated level affecting productivity growth, innovation, and business performance. At the firm level there were dramatic positive effects due to knowledge-sharing, while at the national levels there appeared to be limited impact due, most likely, to the inability to fully exploit the ICT and the lack of information and knowledge-based competencies that would make possible a multiplier effect upon productivity. Other international, OECD-based, and UNESCO studies extended and confirmed this trend in OECD countries (Arora, Fosfuri, & Gambardella 2002; Chaudhry & Meng, 2000; OECD 2002, 2003b, 2003c; Peters & Humes, 2003; Steinmueller, 2002; Wyckoff & Schaaper, 2005).

A suggestion made by E.P. Cassee, Managing Director of HES Amsterdam School of Business, in the recent Club of Amsterdam (2005) *Summit for the Future Report* will help to conclude this section. His comment is a segue to the next section:

Since knowledge management has become one of businesses [sic] (in the western world) most strategic instruments. Matthieu Weggeman (a Dutch professor) has formulated it as: $(K = f R (i.ESA))$. Knowledge is the factor of Reflection on (the information times the Experience, Skill and Attitude). So, knowledge is no longer data that has been given meaning by aggregation times experience. A “new way” of learning has emerged. (p. 165)

A.2 Knowledge Management—a New, Emerging Field vs. a New Discipline

A.2.1 Histories of KM

The roots of KM extend quite far back to very early works in philosophy, metaphysics, and epistemology. In a sense KM is not new; rather it is a fresh recognition and packaging of a number of areas of study that can now demonstrate greater importance because of the interaction of knowledge with business and the emerging knowledge-based economy.

A number of authors, (Amidon, 2002; Fuller, 2002b; Hatchuel, Masson, & Weil, 2002; Ives, Torrey, & Gordon, 1998), have created histories of the KM field, first because it is so young, and second because it has become important, especially for teaching, to be able to trace this emerging field back to its origins. Anecdotally, the formal birth of this emerging field was ascribed by Beckman (1999) to have taken place when Karl Wiig originated the term knowledge management at a 1986 United Nations International Labour Organization conference in Geneva, Switzerland. On the other hand, Koenig and Srikantiah (2000) have located an earlier use of the term in Marchand (1985). The mid-eighties would be the point where KM was born as a term that signified an embryonic concept. I do not intend to repeat the detailed histories here because they would not necessarily enhance this study.

A.2.2 Disciplinarity in KM

The research on the nature of KM comprises overlapping domains because of the interdisciplinary and multidisciplinary nature of the field. A challenge occasionally

proposed in the KM literature revolves around this question: “Is KM crossdisciplinary, interdisciplinary, intradisciplinary, metadisciplinary, multidisciplinary, or transdisciplinary?” There is no simple answer to this question; the meanings for most of these terms are a topic of debate in the research community.

The *American Heritage® College Dictionary 4th Edition* (Editors of The American Heritage Dictionaries, 2004) (AMHER) and the *Compact Oxford English Dictionary* (COED) (2007) furnish an interesting assortment of definitions for the root word as a noun:

- discipline—
 - [AMHER]: 1.-5. not directly relevant. 6. A branch of knowledge or teaching.
 - [COED]: 1–2 not directly relevant. 3 a branch of knowledge, especially one studied in higher education;
- crossdisciplinary—
 - [AMHER]: [undefined]
 - [COED]: [undefined];
- interdisciplinary—
 - [AMHER]: of, relating to, or involving two or more academic disciplines that are usually considered distinct;
 - [COED]: relating to more than one branch of knowledge;
- intradisciplinary—
 - [AMHER]: [undefined]
 - [COED]: [undefined];
- metadisciplinary—
 - [AMHER]: [undefined]
 - [COED]: [undefined];
- multidisciplinary—
 - [AMHER]: of, relating to, or making use of several disciplines at once: a multidisciplinary approach to teaching;
 - [COED]: involving several academic disciplines or professional specializations;
- transdisciplinary—
 - [AMHER]: [undefined]
 - [COED]: [undefined].

The search was expanded to another dictionary, *Random House Webster’s Unabridged Dictionary* (Editors of The Random House Webster's Unabridged Dictionary, 1997), for the undefined terms:

- crossdisciplinary—involving two or more academic disciplines; interdisciplinary: crossdisciplinary studies in Biblical archaeology;
- intradisciplinary—[undefined];
- metadisciplinary—[undefined];
- transdisciplinary—[undefined].

As one might surmise, there is very little within the commonly accepted vernacular of definitions that explicitly suggests boundaries between these concepts. The investigation of these six concepts, with respect to existing disciplines that intersect with KM would be a complex, multi-dimensional research study that could comprise at least one additional, separate dissertation. I could not attempt to address in this sub-section the original challenge posed: “Is KM crossdisciplinary, interdisciplinary, intradisciplinary, metadisciplinary, multidisciplinary, or transdisciplinary?”

The disciplinary model is an accepted, if not dominant, paradigm in most universities. This model facilitates the generation of new knowledge and deeper understanding of the world around us through the identification of boundaries between domains of knowledge. Since KM is not a discipline, I have drawn upon some of the very recent material about interdisciplinarity that has been reported. The result is a proposed framework to begin a dialogue about the potential interdisciplinarity associated with KM. A synthesis of material from Ertas (2000), Grundy (2004), Leitch (2000), Manathunga (2003), Ofer (2005), Pellmar and Eisenberg (2000), Seipel (2005), Klein and Newell (1996), Stember (1998), and Weinberg and Harding (2004) suggested the following general definitions:

- *crossdisciplinary*—one discipline viewed through the perspective of another discipline, i.e., the architecture of information, the history of information science, the mathematics of decision science, the philosophy of religion;
- *interdisciplinary*—the examination or investigation of a central problem or theme through the application and integration of the methods, theories, epistemologies, and models from more than one discipline, e.g., Astrobiology, eBusiness & eCommerce, Entrepreneurship, Information Science, Innovation, Management Information Systems (MIS), Space Science, Systems Analysis;

- *intradisciplinary*—investigations within a single discipline, e.g., a computer scientist studying the relational algebra and data structures of a new relational database management systems;
- *metadisciplinary*—a focus on the meaning of disciplines in order to assess the strengths and weaknesses of the disciplines as well as the knowledge bases excluded from those disciplines;
- *multidisciplinary*—the juxtaposition of the knowledge from numerous disciplines on a problem, without any attempt to integrate or relate the disciplines, e.g., African American Studies, Gender Studies, Women’s Studies; and
- *transdisciplinary*—the construction of a common, systematic approach for a set of disciplines (between, across, and beyond disciplines).

Since KM initiatives, practices, projects, and research integrate and apply knowledge from numerous disciplines onto real-world problems, KM may be interpreted as interdisciplinary (Al-Hawamdeh, 2005; Coleman, 2002; Fairer-Wessels, 1999) or multidisciplinary (Schwartz, 2005a, 2005b). However, participants in a KM initiative must adopt a problem-solving orientation to integrate several disciplines in order to be able to identify and develop a solution that can address the multi-faceted problem under study. Tools, techniques, models, and theories from a broad number of disciplines are integrated into a framework and approach that proposes to solve the problem.

A.2.3 When Does a Field Morph into a Discipline?

First, the difference between a discipline and a field need to be discussed. Academic disciplines are social constructs that separate formally taught branches of knowledge, such as: Arts, Business and Management, Engineering, Humanities, Science, and Social Sciences. Science, for example, is a broad knowledge domain that encompasses the disciplines of: Astronomy, Biology, Chemistry, Computer Science, Earth Science, Physics, etc. Each discipline can be categorized into specializations (or sub-disciplines) based upon higher-level disciplines, e.g., Chemical Engineering is a discipline based upon Chemistry and Mathematics; and Civil, Electrical, and Mechanical Engineering are disciplines based upon Physics and Mathematics. Often the distinctions between sub-disciplines or branches are often arbitrary and ambiguous. Disciplines are usually bound

by characteristics that include: a suite of definitions and concepts; an underlying theoretical framework (or frameworks); an identifiable body of knowledge; a set of identifiable competencies and skills that a graduate from the program should possess; and a learned society or association that promotes the discipline's well-being, longevity, and professionalism.

Fields of study are less formal collections of subjects and topics that may be associated with one or more disciplines. Some fields of study are mature and reasonably stable, like MIS; others, such as Information Architecture, Knowledge Management, Astrobiology, Space Science, and Women's Studies, are either emerging as new fields or evolving from their initial roots.

Although a number of learned societies are springing up around the banner of KM, it is an emerging field because it lacks an accepted set of definitions and concepts, tested underlying theoretical frameworks, agreed upon competencies and skills that a graduate from the program would possess, and an agreed upon body of knowledge (Allix, 2003; Corral, 1998; Davenport & Cronin, 2000; McCampbell, Clare, & Gitters, 1999; Swan & Scarbrough, 2002).

In order to achieve the status of disciplinary viability, I have synthesized a framework of assessment from a number of sources that have discussed the characteristics surrounding a discipline's development (Becher, 1989; Denning, 2001; Dunin-Woyseth & Michl, 2001; Fuller 2002b; Kuhn, 1996). A new field of inquiry that wishes to be accepted as a discipline will need to:

1. acquire a visible status within one or more of the broad groupings of knowledge: arts, business, humanities, social sciences, or sciences;
2. differentiate itself from other disciplines and fields, with an accepted curriculum for educating those who wish to pursue a degree in the field;
3. be able to grant a degree in the name of the discipline or field;
4. document its history;
5. keep a record of its tradition of relevant discourse;

6. establish and maintain a set of agreed upon definitions, including an epistemology consisting of an ontology of terms and a taxonomy of concepts;
7. identify an agreed upon Body of Knowledge (BOK) that would comprise the learning experiences of individuals graduating from an educational program of that profession, and could be referenced as a professional knowledgebase;
8. identify and communicate proven paradigms, beliefs, concepts, frameworks, guiding principles, models, theories, methodologies, methods, metrics, and tools that demonstrate some level of reproducibility of results and scientific validity;
9. publish specialized journals;
10. develop a research agenda to stimulate doctoral work and academic research goals;
11. maintain at least one ‘learned society’ to act as a social organization for practitioners, professionals, students, and academics, as well as serve as a regulatory influence over the discipline; and
12. comply with the rules of the academic world and the praxis required in the practitioner world.

Identifying a field as a discipline creates boundaries. An incredible expenditure of time, energy, money, and resources is required to create and maintain these boundaries and satisfy these criteria. A proposal to create and approve a discipline must be submitted for review and approval to a formal body of learned societies—such an authoritative and august entity does not exist for KM.

KM, as an emerging field, is quite young—less than three decades ‘young’ if the milestone used to peg its beginning is the coining of the phrase ‘knowledge management’ by Marchand (circa 1985) or Wiig (circa 1987). As we read a bit earlier in this chapter, there are well-respected academics who believe that KM has almost achieved the status of a discipline (Jennex & Croasdell, 2005; Nissen & Jennex, 2005; Ponzi, 2004; Schwartz, 2005a; Stankosky, 2005a). Nonetheless, KM as an emerging field has not been able to satisfy more than a few of the assessment criteria outlined above for a discipline.

Thus, for the time being KM would appear to still be an emerging field. Further study and discussion of the interdisciplinarity of KM would be outside of the scope of this dissertation. Nonetheless, it might prove a useful direction for future research. The following section will describe the relationships that have been proposed between Knowledge Management, Organizational Learning, and Complex Systems.

The next section outlines the perspectives held by workplace practitioners and managers in organizations where KM is applied.

A.3 Knowledge Management At Work—The Practitioner and Management Perspectives

A.3.1 The Practitioner Imperative

The Gartner Group, a well-respected practitioner think tank, has written extensively on the importance of the subject of KM—most notably in *The Knowledge Management Scenario: Trends and Directions for 1998–2003*—and has made a number of predictions that have not yet fully materialized (GartnerGroup, Aldrich, & Caldwell, 2000; GartnerGroup, Bair, Fenn, Hunter, Bosik, 1997; GartnerGroup & Fenn, 1996; GartnerGroup, Harris, & Hayward, 2000; GartnerGroup & Logan, 2000). Two particular forecasts contained indicators that implied critical requirements for new university programs in information management, information science, and management science (GartnerGroup, et al., 1999, p. 2):

1. by 2001, firms lagging in KM programs would see a dramatic reduction of between 30–40% in their capability to mount new programs of a competitive nature; and,
2. between 1998 and at least 2003, KM programs that focus simultaneously on the technology, the business process, and the individuals involved in the business will be more successful than those trying to focus on only one aspect of KM.

GartnerGroup, et al. (2003) described the different topics associated with KM and their current state of interest by businesses in *Hype Cycle for Knowledge Management, 2003*. Gartner reiterated that KM was becoming a critical business discipline for enhancing competitiveness and supporting decision-making. The more recent availability of integrated KM applications and tools, which did not exist before 2001, had led to more widespread adoption in the marketplace. In their opinion the tools were being absorbed at

different rates within the enterprises based upon the maturity levels and hype associated with each tool:

- a large number on the rise, triggered by their *technological attraction*;
- some already at the peak of expectations *inflated by the vendors*;
- others sliding through the *trough of disillusionment* because they had not fulfilled the anticipated benefits to the business;
- still others that had entered the *slope of enlightenment* where their actual value had been discovered and applied; and, finally,
- those tools that had reached the *plateau of productivity* in which they had been adopted and applied with significant positive business results.

True to form within the context of KM as a technological imperative, the maturity assessment overlooked how organizations would educate their employees in the theory, use, and application of these tools. Conventional corporate training approaches were assumed to be the standard mode of educating the workforce about KM tools through off-the-shelf mini-courses and seminars. However, the survey of 200 senior executives by The Conference Board Inc. and Hackett (2002, March) demonstrated a close connection between KM, work, and learning, especially in firms such as BP Amoco, Ford Motor Company, and Buckman Labs. Nonetheless, this study reported that only 13% of the CEOs initiated and directed a shared learning culture. Unless a senior executive is personally committed to the strategic and cultural changes required in a corporation, then KM is not easily integrated into the work and learning of the firm.

Additionally, in 2000 the International Data Corporation, (IDC), predicted in its software forecast that the KM software industry was expected to reach \$4.2 billion worldwide by the year 2004 (International Data Corporation & McDonough, 2000). Within a few years that estimate had been scaled back by almost half with the release of the Gartner and Oppenheimer (2003) report entitled *Collaborative Software and Knowledge Management Tools Market, 2002–2007*. Again in Gartner's (2004) *Market Share: Collaboration Software and Knowledge Management Tools, EMEA, 2003, (Executive Summary)*, the software license sales were estimated to be \$886 million for Europe, the Middle East, and

Africa. Representing between 25% and 33% of global sales, the overall amount would be estimated to be \$2.7 billion and \$3.5 billion, a drop from IDC's original estimate, but a demonstration of a trend that would suggest tools labeled as KM-like are being widely adopted. The diminished prediction was attributed to the "confusing and volatile market environment." KM was changing and morphing while the *knowledge economy*, itself, appeared to be undergoing critical structural adjustments.

Numerous surveys have been executed and published about KM in the business environment. A 1997 report, *The Knowledge Factor*, from the Ernst & Young (E&Y) Center for Business Innovation in Cambridge, MA, and Business Intelligence Ltd. in London, England, (as cited in Glasser, 1998–1999, ¶ 6), presented survey results from interviews with 431 organizations studied in Europe and the USA. Of the survey executives, 94% believed that they could leverage the existing knowledge better through more deliberate management of the knowledge. Within the same group of executives, 71% rated their businesses as average or less than satisfactory at extracting and integrating existing knowledge associated with processes, products, and services.

A.3.2 The Manager Imperative

Within five years of the E&Y report KPMG (2003) (an internal accounting firm) released a similar survey of the business leaders of the top 500 organizations in the UK, France, Germany, and the Netherlands. The results were rather sobering. According to KPMG, during the five year period between 1999 and 2003 the practice of KM in the public and private sectors was approaching a high maturity level. However, business leaders reported that although they considered knowledge a strategic asset (80%), almost the same percentage of respondents felt they were missing out on business opportunities because they had failed to exploit their organizations' available knowledge. The respondents identified a pressing need to acquire methodologies and tools to exploit these key knowledge domains across processes and business functions critical to their enterprise. This requirement was underscored by the lack of employee skills and competencies in the ability to successfully conceptualize, exploit, manage, and implement KM projects, i.e., the lack of an experienced and educated workforce that understood and could direct the management of knowledge in their enterprises.

Practitioners have also given considerable thought to frameworks for KM. Dan Holtshouse, Director of Business Strategy and Knowledge Initiatives at Xerox Corporation proposed a popular framework for the practitioner world. He suggested ten domains of KM around which education, training, and deployment could be built (Holtshouse, 1999, p. 4; Kikawada & Holtshouse, 2001, p. 286):

- sharing knowledge and best practices,
- instilling responsibility for knowledge sharing,
- capturing and reusing past experiences,
- embedding knowledge in products, services, and processes,
- producing knowledge as a product,
- driving knowledge generation for innovation,
- mapping networks of experts,
- building and mining customer knowledge bases,
- understanding and measuring the value of knowledge,
- leveraging intellectual assets.

These primary domains of KM meta-knowledge have helped inform practitioners with a representative view of the elements encompassing this emerging field. On a global level the perception of the importance the first element in Holtshouse's taxonomy, *sharing knowledge*, has been one of the key success areas in KM practice (KPMG, 2003, p. 11), especially in terms of Communities-of-Practice (COPs) and Communities-of-Interest (COIs) that are both customer- and supplier-based (Fong, 2005; Glisby & Holden, 2005; Gollner, 2006; Lesser, Fountaine, & Slusher, 2000; Saint-Onge & Armstrong, 2004; Saint-Onge & Wallace, 2003; Voelple, Dous, & Davenport 2005; Wenger, 1998; Wenger, McDermott, & Snyder, 2002).

A.3.3 The Imperative for KM Education for Practitioners

The practitioner domain has also spawned numerous studies to reinforce the perception that KM is an important emergent phenomenon populated with significant tools and applications. The studies have created a formidable demand and momentum for anticipated new educational programs to satisfy the demand emerging from the hypothetical and evolving *knowledge economy* (Blackler, 1995; Eustace, 2000; International Data Corporation, Cap Gemini, & Rajah, 1999; Ipsos-Reid & Co., 2001; KPMG Consulting, 1999; North & Stopford, 1999; Saito & Umemoto, 2005).

Covin and Stivers (1997, p. 146) were adamant in their recommendation that “educational efforts focused on knowledge management technologies will also be necessary if all employees are to contribute and benefit” from the codification of their knowledge from tacit to explicit—a process requiring specialized knowledge, competencies, and skills. Even the OECD (2004b) is vigorously promoting the increased need for education programs to equip employees with the new competencies required for work in the emerging knowledge economy:

The competences required in the knowledge economy are not necessarily new. What has changed is that knowing how to manage such knowledge is part of the new competences required for the knowledge economy. Knowledge management should make it possible to deduce a considerable number of skills that everyone needs to develop: sharing, sorting and memorising, communicating, codifying, and retrieving documents, etc. This general concept—knowing how to manage knowledge—is a procedure for identifying and classifying the new skills required and establishing what education programmes are best suited to the knowledge economy. (p. 6)

Parallel to this emerging demand for education was the recent availability and publication of numerous sources for describing best practices, case studies, and lessons learned about KM projects (American Productivity & Quality Center, 1997, 1998, 1999a, 1999b, 2000a, 2000b; Giber, Carter, & Goldsmith, 2000; Harkins, Carter, & Timmins, 2000; Koenig & Srikantaiah, 2004). Measurement criteria that could be used to assess the success of trying to ‘manage the knowledge’ have become critical success factors in every KM project (Little, Quintas, & Ray, 2002; Morey, Maybury, & Thuraisingham, 2000; OECD, 2003c; Prichard, Hull, Chumer, & Willmott, 2000). Without the access to such examples, practitioners have been constrained in justifying the business case for a KM initiative and obtaining executive support to launch initiatives and invest in projects. Consequently, the collaboration of well-known practitioners with academics and their institutions has led to an authentication and legitimization of KM practices, methods, and techniques as demonstrated throughout the next section. KM as an emerging field appeared to be spawned by practice and then picked up by the academy for further research.

A.4 Knowledge Management and Organizational Learning—a Complimentary Perspective

A.4.1 The Potential Relationship Between KM and Organizational Learning

The volume of written material describing the relationship of KM and Organizational Learning (OL) is currently scarce. Yet, a question that almost always arises in a discussion of KM is its relationship with OL (Argyris & Schön, 1978, 1996). Mark McElroy and Peter Senge were two of the first pundits in their respective fields to attempt to relate these fields. Mark McElroy was one of the early KM consultants working for a number of management consulting firms—Price Waterhouse, KPMG Peat Marwick, AnswerThink Consulting Group, and IBM's KM Consulting Practice. He was a founder of the *Knowledge Management Consortium International* (2006). Peter Senge established the OL field in his seminal work *The Fifth Discipline* (1990) and extended this from teams to the whole organizations in *Dance of Change: The Challenges to Sustaining Momentum in Learning Organizations* (1999).

McElroy (2000), a KM theorist and author of *The New Knowledge Management* (2003) suggested a convergence of the separate management practices associated with members of the KM community itself, advocates of OL and systems thinking, and promoters of the application of complexity theory to business. He contended that few of the potential target audiences could really see it coming. McElroy asserted that the issues and concerns challenging KM and OL were the same as those grappled with by the chief architects of complexity theory, John Holland, Keith Holyoak, Richard Nisbett, and Paul Thagard, in *Induction: Processes of Inference, Learning and Discovery* (1986).

Senge disclosed a number of misgivings he had when he ignored KM while proselytizing OL:

To me the first wave of knowledge management hasn't been about knowledge at all. It's been about information—how to capture it, store it, retrieve it, access it and all that stuff. All those verbs work great for information, but none of them actually work very well for knowledge. ...

[A] "second wave of knowledge management" that addresses some of the same critical issues SoL [Society for Organizational Learning] members have been struggling with the sustainable creation, transfer and dissipation of organizational knowledge. ...

What is the nature of organizational knowledge, how is it generated, how is it diffused, what does it mean to develop more knowledge-based strategies? What happens at the interface between acquiring information and generating knowledge? These are issues that are deep and hardly trivial by any stretch. And I think these questions will occupy people in organizations a good deal for the next 10 years. These are issues that people are really going to be wrestling with. (Karlenszig, 1999, ¶ 5, ¶ 8, ¶ 30)

More attempts to link KM and OL have been reported:

- Dierkes, Antal, Child, and Nonaka (2001) described the OL work emanating from the *Ladenburger Kollegs*, interdisciplinary research groups sponsored by Gottlieb Daimler and Karl Benz Foundation in Europe;
- Dutrénit (2000) used a Mexican case study to discover the relationship between the early stage accumulation of innovative capability and the management of knowledge as a strategic asset in a learning organization;
- Easterby-Smith and Lyles (2003) compiled a virtual university of concepts and ideas about KM and OL in order to jolt the reader and confront him/her with learning experiences as a means to acquire additional knowledge about OL and KM;
- Rowley (2001) proposed that learning should take place within a knowledge cycle;
- Sanchez and Heene (1997) diffused a new theory for the strategic management of learning organizations and knowledge assets; and
- Thong, Chau, and Tam (2001) introduced a special issue of the *Journal of Organizational Computing and Electronic Commerce* to discuss KM and OL within the technological context of the Intranet.

A.4.2 Organizational Learning vs. Individual Learning

Senge, along with OL and Systems Thinking (ST) theorists, claimed that there was a tension in organizations between individual learning and the resulting individual

knowledge, and organizational learning and the resulting organizational knowledge. This tension promoted innovation and creativity (Seng, Zannes & Pace, 2002), but could also reduce defects and improve process capability (Wiklund & Wiklund, 2002), as well as increase competences in firms (Chaston, Badger & Sadler-Smith, 2000; Drejer, 2000). New and more effective ideas were the consequence of the individuals and the organization wrestling with established ideas that were no longer encouraging performance advantage for the business.

Organizational learning is the “activity and the process by which organizations eventually reach the ideal of a learning organization” (Finger & Brand, 1999, p. 136). Successful business leaders in Dell, Hewlett-Packard, FedEx, Petrotechnical Open Software Corporation, Schlumberger Ltd., and Wal-Mart, to name but a few firms of this genre, advocated that the capability to learn faster than your competitor is the only sustainable competitive advantage. They are living proof, for the time being, of something that might deserve the token of *learning organization*. These organizations have applied some theory in their workplaces, and it seems to have affected their competitive capability (Snyder, 1996). No one has yet determined if the results are associated with KM or OL.

A number of OL theorists have also expounded upon the closer relationship building between OL and KM (Argote, 2005; Chiva & Alegre, 2005; Friedman, Lipshitz, & Popper, 2005; Johannesssen, Olaisen, & Olsen 1999; Marshall, et al. 2003). Others have described the relationship between KM and OL to be rather tenuous. Sharma (2003) contended that OL was a diffused, ill-defined concept with minimal capability to be applied practically, while KM combines numerous approaches but lacks a unifying vision. Sharma suggested, however, that certain KM models could be used to facilitate the practice side of OL:

- Intellectual Capital Model (Allee, 1997),
- Socially Constructed Model (Demarest, 1997), and
- Knowledge Category Model (Boisot, 1987, as cited in McAdam & McCreedy, 1999, p. 97; Nonaka & Takeuchi, 1995).

Thus, there certainly appears to be a connection between KM and OL. Future research may ascertain whether these fields merge, stay separate, or one absorbs the other.

A.5 Knowledge Management and Complex Systems—a Symbiotic Perspective

A.5.1 The Basics of Complexity Theory

The volume of written material describing the relationship of KM and Complex Systems (CS) is also sparse, but singularly interesting. Complexity theory, put very simply, is a line of enquiry that studies the coherence and emergence of order from systems lacking any capability for central planning, order, and control (Cilliers, 2000). The term *complex* is subjective, culturally-based, and is associated with our human interpretation of the actions, agents, and outcomes of an entity we regard as a system.

Wittgenstein (Monk, 1996) expressed complexity in terms of our capability to express something in the real world with language. Therefore, the distinction between simple and complex can be expressed in a language: something that is simple is easily expressed in a language of symbols, while something that is complex cannot be expressed in language. Thus, “complexity is directly proportional to the length of the shortest possible description of that object [process, or system]. ...the notion of economy of description allows us to talk about the complexity of patterns of any sort, not just patterns of letters and numbers” (Casti, 1995, p. 9). Thus, a short, precise description suggests something simple, while a longer or fuzzy description of something suggests that the reality being described cannot easily be expressed—at best, it can only be imperfectly approximated in the language.

A.5.2 Complex Systems

CS—the management of human social systems—is the area within complexity theory (CT) that is most closely associated with KM and OL. According to complexity theorists, human organizations are living, organic systems that manifest similar behaviours to other complex systems, such as ant colonies, bird populations, schools of fish, and weather patterns. Some representative patterns and behaviours could include: “problem detection, intrinsically motivated learning, group and community formation, communities of inquiry

or practice, problem solving, knowledge evaluation, and adoption” (Firestone & McElroy, 2003, p. 98).

A CS can be viewed from three perspectives (Firestone & McElroy, 2003, p. 61):

- Non-Adaptive System (NAS),
- Simple Adaptive System (SAS), or
- Complex Adaptive System (CAS).

A NAS is a Newtonian system lacking the capability to adapt, such as the random collisions involved with atomic particles, chemical elements, and predator–prey coupling. When two atomic particles collide, a predictive model exists to account for their resulting trajectory and direction. The same holds true for two or three elements coming into contact with each other, like the reaction of a bird to the presence of a cat. Some human social systems contain NASs. For example, a bureaucratic process requires data to be constrained to specific, unalterable fields on a form before the next step can be triggered, and disallows data outside of the scope of the form (and process), which cannot be accommodated.

A SAS is a CS that responds to stimulus–response rules—e.g., the strategies an agent will take when acted upon—and, consequently, lacks the emergent behaviour and adaptive capability of a CAS. A SAS exhibits certain characteristics: “predictive behaviour, few interactions and feedback/feedforward loops, centralized decision-making, decomposability” (Casti, 1995, p. 271–272). One example of a SAS would be the annual Easter Egg Hunt a family will sponsor for its small children on the Easter Holiday. One parent will hide the eggs in locations within a bounded yard that are both easy and difficult for the children to find. The children are told to go forth and find the eggs that the Easter Bunny has dropped. With very little coaxing the children will traverse the yard looking under and behind objects to see if they can discover an egg. If the yard is small, the children will usually discover most of the eggs in a short time. If it is larger, the children may actually decide that they will take a certain quarter or section as the territory they will search. Only when they feel they have exhausted their territory will they venture forth into someone else’s. The parents may provide occasional feedback in the form of

remarks like “you are getting warmer,” or “you are getting colder.” Other examples include one-celled amoeba, a small plant, or an adaptive algorithm for eliminating sinusoidal interferences.

Finally, a CAS is a goal-driven open system that tries to integrate itself to its environment (Holland, 1995). The integrative behaviour is based upon intuitive principles that direct changes in an organism’s or entity’s structure. The adaptive behaviour is triggered by rules associated with environmental inputs—simply referred to as the application of accumulated *experience* on the internal and external environment. The CAS exhibits a coherent, self-organizing, emergent behaviour that cannot be modeled from the components of the system. However, this behaviour is sustainable. Examples of CAS include the central nervous system, ecosystems, the city of London (UK), and the global economy.

A.5.3 The New Knowledge Management (TNKM)

McElroy (2003) and Firestone and McElroy (2003) suggested an interpretation of the events leading to the convergence of KM, OL, and CS. They labeled this convergence the Second Generation of Knowledge Management (SGKM), or as McElroy titled one of his books, *The New Knowledge Management (TNKM)*. McElroy and Firestone stressed that TNKM had evolved from the first generation which was preoccupied with creating centralized knowledge repositories of objects, and therefore obsessed with the supply-side of knowledge production. TNKM incorporated a greater appreciation of the supply-side of knowledge production and joined together this element into the demand-side of knowledge integration, resulting in the construction of a Knowledge Life Cycle (KLC) framework for KM.

The KLC was based upon the application of CAS to knowledge processing (knowledge production and knowledge integration) in human social systems and their immediate outcomes (Firestone & McElroy, 2003). Within this context KM is actually Knowledge Process Management (KPM), a management activity whose goal is to enhance knowledge processing throughout the organization. Of course, Firestone and McElroy were not the only theorists to propose models for KM based upon CAS. Snowden (2000,

2002) proposed the Cynefin model in an attempt to describe the dynamics of knowledge production and its flow within and between organizations.

In parallel to the ideas of complexity theorists, KM theorists also propose that new knowledge that is created and flows within a business is a characteristic of innovation. This new knowledge accelerates the opportunity for the organization to learn, increases its creativity, and helps to adapt to the constantly changing, global business environment. This business environment is, itself, a CS. Even though the science of complexity cannot yet account for how order emerges out of disorder, complexity theorists hypothesize that an insight and understanding into complex human organizations could help businesses to innovate and gain significant performance advantages.

A.5.4 Intelligent Complex Adaptive Systems (ICAS)

Bennet (2004) and Bennet and Bennet (2000, 2001, 2003a, 2003b) extended the CAS model even further by proposing a framework to describe an Intelligent Complex Adaptive System (ICAS). The ICAS is:

[A complex organization] composed of a large number of individuals, groups, and human subsystems that have nonlinear interaction and the capability to make many local decisions and strive for specific end states or goals. These components build many relationships both within the organization and external to the organization's boundaries that may become highly complex and dynamic. Together, these relationships and their constituents form the organization and its enterprise. The word *adaptive* implies that the organization and its subcomponents are capable of studying and analyzing the environment and taking actions that internally adjust the organization and externally influence the environment in a manner that allows the organization to fulfill local and higher level goals. (Bennet & Bennet, 2004. p. 26)

Bennet and Bennet ascribe eight emergent characteristics in their model of an ICAS that provide the internal capability to cope with the “rapidly changing, nonlinear, complex, dynamic, and uncertain world” (p. 30) that represents the present and future environment.

The characteristics of the ICAS model are (Bennet & Bennet 2004, p. 30–33):

- *Organizational Intelligence*—the capacity to exhibit intelligent behavior; the ability of an organization to perceive, interpret and respond to its environment in a manner that simultaneously meets its organizational goals while satisfying its

- stakeholders, (i.e., its employees, customers, investors, community, and environment).
- *Unity and Shared Purpose*—the ability of the ICAS organization to integrate and mobilize resources to (1) provide a continuous line of focus and attention and (2) pull together the relevant parts of the organization when and where they are needed.
 - *Optimum Complexity*—the number of possible states that make a difference to the organization that are important, selectively reducing confusion, simplifying decisions, keeping the organization’s attention more focused, and, consequently more powerful.
 - *Selectivity*—the filtering of incoming information from the outside world, through internal communication and “group digestion” of unusual events requiring broad knowledge of the environment, specific knowledge of the customer, and a strong sense of the organization’s strategic intent.
 - *Knowledge Centricity*—the aggregation of relevant information derived from the knowledge of the organization’s components that enables self-synchronization and increases collaborative opportunities while promoting strategic alignment.
 - *Flow*—enables knowledge centricity and facilitates the connections and continuity that maintain unity and give coherence to organizational intelligence, while stimulating the organization’s experience through the flow of data, information and knowledge amongst individuals across, and, in and out of the organization.
 - *Permeable Boundaries*—enabling permeability and porosity for the individuals coming to and going from the organization to ensure the survival of the enterprise.
 - *Multi-dimensionality*—competencies that ensure ICAS knowledge workers have the ability to view the environment from many different perspectives and to apply a variety of thinking styles and core competencies to issues and problems. These capabilities give the organization an ability to continuously forget and learn; to identify and deal with risk; to think in terms of systems; to rapidly shift its frequency of operations; to perceive and analyze situations in terms of a wide scope of possibilities and long time-frames, all the while maintaining its organizational identity and unity.

No formula exists to design, predict, or evolve the eight characteristics into an ICAS. By the very nature of a CAS, the individuals, groups, and organization itself are the basis for its emergence.

Bennet and Bennet (2004) suggested that these properties were the foundation for the optimal performance associated with four critical processes that effectively interact with the external environment and with internal and external stakeholders. These processes ensure survival of an ICAS (p. 34–35):

- *Creativity*—the human act of generating new ideas, perspectives, understanding, concepts or methods that help in solving problems or building new products
- *Problem solving*—the act of taking inputs from the creative process and providing a set of alternatives that furnish ways to achieve a desired situation or problem solution.
- *Decision making*— the purposeful goal-seeking selection of one or more alternatives generated by the problem solving process.
- *Implementation*—taking good decisions and turning them into actions and changes that create new, improved products or services based upon efficiency and clarity of communication, coupled with openness and a sincere concern to share understanding and get participation amongst members of the enterprise.

Connections between processes and relationships are highly complex and very difficult to track, since the cause–effect chains are not easily discovered. Planning change in an organization is virtually impossible because the emergent characteristics are imprecise. Nonetheless, the existence and survival of an ICAS is indicative of the interaction of the eight characteristics with the external world of change, complexity, and uncertainty.

An ICAS, by its very nature, is knowledge-centric and will traverse the numerous steps outlined in the KLC of Firestone and McElroy (2003). According to Bennet and Bennet (2005), Knowledge Management is embedded within an ICAS. KM would support the ICAS organization’s mission, goals, and objectives by optimizing the effective application and flow of intellectual capital.

APPENDIX B – SUMMARIZED TABULATIONS FOR KM PROGRAM OFFERINGS

<i>Institution Name:</i>	<i>College/ School/ Faculty /Dept /Div Name:</i>	<i>Bach. Degree</i>	<i>Mast./ Postg. Cert.</i>	<i>Mast./ Postgr. Dipl.</i>	<i>Master's Degree</i>	<i>Ph.D.</i>
University of Aberdeen	Department of Computing Science				MSc	
University of Aberdeen	Department of Computing Science				MPhil	
University of Aberdeen	Department of Computing Science					PhD
University of California, Berkeley	School of Information Management and Systems		X			
University of Buckingham	Department of Management		X			
University of Buckingham	Department of Management			X		
University of Buckingham	Department of Management				MSc	
Canadian School of Management	School of Management			X		
University of Canberra	Division of Communication and Education				MA	
University of Central England	School of Computing - Faculty of Computing, Information and English				MSc	
Cranfield University - Shrivenham	Royal Military College of Science			X		
Cranfield University - Shrivenham	Royal Military College of Science				MSc	
Curtin University of Technology	School of Media and Information		X			
Curtin University of Technology	School of Information Systems				MIM	
University of Denver	College of Education, Library and Information Science				MLIS	
Dominican University	Center for Knowledge Management - Graduate School of Library and Information Science & Graduate School of Business and Information Systems		X			
Dominican University	Graduate School of Library and Information Science, Center for Knowledge Management & Graduate School of Business and Information Systems				MSc	
Drexel University	College of Information Science and Technology		X			
Edinburgh University	Department of Artificial Intelligence				MSc	

Table B-1-1 International KM Program Offerings

<i>Institution Name:</i>	<i>College/ School/ Faculty /Dept /Div Name:</i>	<i>Bach. Degree</i>	<i>Mast./ Postg. Cert.</i>	<i>Mast./ Postgr. Dipl.</i>	<i>Master's Degree</i>	<i>Ph.D.</i>
Edith Cowan University	Faculty of Communications, Health and Science, Department of Computer and Information Science		X			
Edith Cowan University	Faculty of Communications, Health and Science, Department of Computer and Information Science		X			
Edith Cowan University	Faculty of Communications, Health and Science, Department of Computer and Information Science			X		
Edith Cowan University	Faculty of Communications, Health and Science, Department of Computer and Information Science				MIKM	
Florida State University	School of Information Studies				MA	
Florida State University	School of Information Studies				MSc	
George Mason University	School of Computational Sciences					PhD
George Mason University	School of Public Policy				MS	
George Mason University	School of Public Policy				MS	
George Washington University	School of Engineering and Applied Science, Engineering Management and Systems Engineering Department				MEM	
George Washington University	School of Engineering and Applied Science, Engineering Management and Systems Engineering Department				MS	
George Washington University	School of Engineering and Applied Science, Engineering Management and Systems Engineering Department					PhD
George Washington University	School of Engineering and Applied Science, Engineering Management and Systems Engineering Department		X			
Japan Advanced Institute of Science and Technology	School of Knowledge Science				MS	
Japan Advanced Institute of Science and Technology	School of Knowledge Science					PhD
Kent State University	School of Library and Information Science				MSc	
University of Kentucky	Gatton College of Business and Economics					PhD

Table B-1-2 International KM Program Offerings (cont'd)

<i>Institution Name:</i>	<i>College/ School/ Faculty /Dept /Div Name:</i>	<i>Bach. Degree</i>	<i>Mast./ Postg. Cert.</i>	<i>Mast./ Postgr. Dipl.</i>	<i>Master's Degree</i>	<i>Ph.D.</i>
KM University	Knowledge Science and Technology Institute		X			
KM University	Knowledge Science and Technology Institute				MS	
KM University	Knowledge Science and Technology Institute					PhD
La Salle University	School of Business Administration	BS				
Lancaster University	Department of Behavior in Organizations				MA	
London Metropolitan University	Computing And Information Management		X			
London Metropolitan University	Computing And Information Management			X		
London Metropolitan University	Computing And Information Management				EMSc	
Long Island University	Palmer School of Library and Information Science					PhD
Loughborough University	Department of Information Science				MSc	
Loyola University Chicago	School of Business Administration		X			
Monash University	School of Information Management and Systems				MIMS	
Nanyang Technological University	School of Communication & Information				MSc	
University of New Castle upon Tyne	School of Management					PhD
Northeastern University	University College of Continuing and Adult Education		X			
University of Oklahoma	School of Library and Information Studies				MSc	
University of Otago	School of Applied Science, Department of Software Engineering				MAppSc	
University of Pretoria	Department of Information Science	BIS				
Rensselaer Polytechnic Institute	Department of Information Technology	BS				
Robert Gordon University	School of Information and Media			X		
Robert Gordon University	School of Information and Media				MSc	
Rockhurst University	School of Management	BSBA				

Table B-1-3 International KM Program Offerings (cont'd)

<i>Institution Name:</i>	<i>College/ School/ Faculty /Dept /Div Name:</i>	<i>Bach. Degree</i>	<i>Mast./ Postg. Cert.</i>	<i>Mast./ Postgr. Dipl.</i>	<i>Master's Degree</i>	<i>Ph.D.</i>
Royal Roads University	School of Business				MA	
Royal Roads University	School of Business			X		
Royal Roads University	School of Business				MBA	
Simmons College	Graduate School of Library and Information Science, Competitive Intelligence Center				MS	
Simmons College	Graduate School of Library and Information Science, Competitive Intelligence Center		X			
University of South Australia	Division of Education, Arts and Social Sciences, School of Communication, Information and New Media		X			
University of South Australia	Division of Education, Arts and Social Sciences, School of Communication, Information and New Media			X		
University of South Australia	Division of Education, Arts and Social Sciences, School of Communication, Information and New Media				MA	
South Bank University	School of Computing, Information Systems & Mathematics.				MSc	
Stanford University	Department of Computer Science				MSCS	
Stanford University	Center for Professional Development		X			
Stellenbosch University	Department of Information Science, Centre for Knowledge Dynamics and Decision-Making				MPhil	
Syracuse University	School of Information Studies					PhD
University of Technology - Sydney	Faculty of Business			X		
University of Toronto	Knowledge Media Design Institute				MA	
University of Toronto	Knowledge Media Design Institute				MSc	
University of Toronto	Knowledge Media Design Institute					PhD
University of Toronto	Faculty of Information Studies		X			
University of Toronto	Faculty of Information Studies				MISt	
Walden University	School of Management				MBA	
Widener University	School of Business Administration		X			

Table B-1-4 International KM Program Offerings (cont'd)

APPENDIX C – CHRONOLOGY OF PROCEDURAL STEPS
AT THE SELECTED SITES

C.1 – Stage 1: Pre-Field Site Visit Activities

I prepared a number of documents for each KM case study site (see Appendix D):

- formal institutional contact letter;
- pro forma institutional permission letter;
- informed consent form;
- informant contact letter; and
- documentation collection checklist.

The remaining two candidate sites were again canvassed to establish their ‘actual,’ solid institutional interest and commitment, to identify an official site authority, and to gauge the exact number of potential participants interested in being interviewed. Although I had received approval for a *McGill University Certificate of Ethical Acceptability for Funded and Non Funded Research Involving Humans*, both sites insisted that I submit an additional application to their respective Research Ethics Committees, using their forms and approval processes. Neither institution had ever been involved as the focus of a research study. Subsequently, after a lapse of between a few days and a couple weeks, further Ethics Certificates were granted to me by each institution’s “Ethics Review Boards.” Additionally, the site authorities provided me with a formal agreement in the format of Institutional Permission Letters.

During the period of time the certificates were being approved, I liaised with the site authorities to establish a candidate list of interview participants. Once the candidate list, (containing names, positions, email addresses, physical addresses, telephone numbers, and fax numbers), had been finalized, I contacted the identified individuals (or their assistants). I quickly attempted to establish a tentative schedule for the interviews, forwarded again the overview of the research project and the anticipated topics that would be covered in the interviews and conveyed an advance copy of the Informed Consent Form for the participant’s review (see Appendix D).

The site authorities and informants were also sent a checklist of requested documentation in advance of the fieldwork visit that was considered intrinsic to the data collection process. This list included suggested document types, such as program conception, design, and development meeting agendas, departmental and curriculum committee meeting minutes, relevant correspondence and email, submissions for approval by the university, and reports.

From the perspective of privacy, anonymity, and confidentiality, I outlined in writing to the site authority and the informants the approach I would use to maintain confidentiality of research data and records. I preserved the anonymity of interview informants and institutions names through alias assignments. I also promised to purge any information from the repository that was shared ‘off the record’ by the informants. A computer program (NVivo Ver. 2) was selected and purchased in order to tag the data and support the analyses of the material in the repository.

C.2 – Stage 2: Field Site Visit Activities

Upon arrival at each site, I was provided an office, telephone and network access, and access to documents the site authority felt would be of particular interest to the study. Although the documents were not stamped as CONFIDENTIAL the institutions granted me ‘browsing access’ on the condition that certain classes of information would be withheld from any third parties and treated as PROPRIETARY. I developed trust with the informants through a tacit agreement with the site authorities where only limited extracts and quotes would be reported in the dissertation. Any information that might accidentally disclose the identities of the institutions would be hidden or masked.

Thus, any references to countries, states/provinces, agencies, departments, universities, etc., were described using a generic phrasing or word. Instead of attributing a particular state or provincial educational authority, (such as a State Board of Regents or Provincial Ministry of Education), the study referenced such an organization by a generic phrase (State/Provincial Educational Authority). This approach was necessary in order to:

- build and maintain trust with the institutional participants;

- obtain access to material that could be summarized or referenced after sanitization to protect the identity of the institution; and
- reference CONFIDENTIAL or PROPRIETARY material appropriately that might not otherwise be available.

When I arrived at a site I immediately contacted all potential participants (research informants), reaffirmed their interest, answered any questions that could be covered before the meeting, and confirmed their appointment time and location. Upon arrival at each scheduled meeting, I introduced myself and the dissertation study, discussed any questions associated with the Informed Consent Form, asked for the form to be signed before continuing, and, then proceeded through the structured questions appropriate for participant being interviewed. I recorded each interview with a digital recorder.

As the first step in the interview process, I briefed the informants about their rights to refuse to participate or to withdraw from participation for any reason and at any time. Additionally, any document types or titles mentioned or uncovered during the interviews that were not specified on the checklist were noted. If the informant consented to releasing material to me, then copies of documents were collected after the interview.

The interview process captured the informants' own definitions and concepts of the processes associated with the conception, design, and development of the KM programs. Informants were interviewed in an environment selected on site to diminish interruptions and be conducive to continuing to build informant trust, confidence, and ease. I maintained a personal journal of interview notes that was used later to highlight and confirm issues, concerns, problems, or situations that may not have been captured during the taped sessions.

I minimized any risks associated with exposure the informants might have experienced by participating in the study. I also minimized any resulting social consequences that the study might have triggered (such as the sharing of a personal comment by an informant),

although to the best of my knowledge, none occurred. I used the research findings only for the intended purpose of this study.

From the perspective of interviewing and reporting practices, I treated all informants with respect and reported interviews truthfully, regardless of my personal opinion about any revelation about the shared information. I minimized the interjection of my personal, professional, and practical experiences (or insights) with informants. This helped to maintain the *bracketing* necessary in a qualitative study where the goal was to stimulate in each informant the recollection of sensemaking, knowledge creation, and decision-making experiences. I engaged in candid, open, honest, and non-deceptive practices associated with the execution of the study.

Digital and hard copy formats of documentation relevant to the data collection process were filed in provisional digital and hardcopy repositories for further analysis. Documentation received, but not deemed relevant, was also maintained for audit purposes.

Finally, I proposed specific benefits to each informant for participating in the study, and committed to follow up on these when the study is published. The value proposition I proposed to the informants included forwarding a copy of the dissertation and volunteering to provide a lecture on the findings, once completed, at each site; or delivering a seminar on KM or the subject of the study at the site.

C.3 – Stage 3: Post-Field Site Visit Activities

After concluding the site visit and returning to McGill University, I followed up on any information I had requested that was unavailable at the time of the interviews. I filed and labeled the documents that I received, contracted out the transcription of the records to a trusted professional transcriber who was under a non-disclosure agreement, and finally edited the transcribed digital recordings. Next, the transcripts of the recordings were sanitized (names and other identifying information replaced with generic placeholders) and prepared for importing as digital documents into the computer program for coding.

A lapse of time between the fieldwork data collection and desk work data analysis was crucial to providing sufficient time for reflection. Although one to two months between these major phases had been anticipated, almost a year and a half transpired between data collection and analysis due to personal financial constraints.

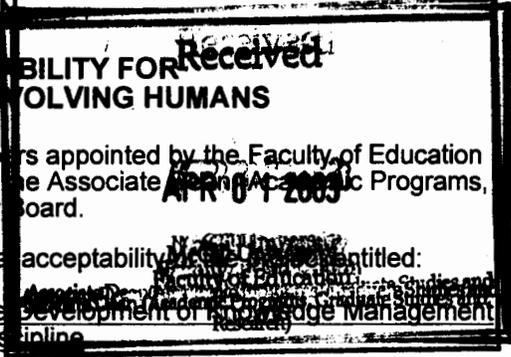
APPENDIX D – APPROVED ETHICS CERTIFICATE

D.1 Exhibit 1 – McGill University Certificate of Acceptability for Funded and Non Funded Research Involving Humans¹⁵

¹⁵ The following exhibit is a copy of the original certificate with its own internal page numbering.

MCGILL UNIVERSITY
FACULTY OF EDUCATION

CERTIFICATE OF ETHICAL ACCEPTABILITY FOR
FUNDED AND NON FUNDED RESEARCH INVOLVING HUMANS



The Faculty of Education Ethics Review Committee consists of 6 members appointed by the Faculty of Education Nominating Committee, an appointed member from the community and the Associate Dean (Academic Programs, Graduate Studies and Research) who is the Chair of this Ethics Review Board.

The undersigned considered the application for certification of the ethical acceptability of the research entitled:
Examination of the Historical Sensemaking Processes Representing the Development of Knowledge Management Curricula in Universities: Case Studies Associated with an Emergent Discipline

as proposed by:

Applicant's Name Michael J.D. Sutton
Applicant's Signature/Date *Michael J.D. Sutton*
Degree / Program / Course Ph.D.

Supervisor's Name Dr. France Bouthillier
Supervisor's Signature *France Bouthillier*
Granting Agency N/A

The application is considered to be:
A Full Review _____
A Renewal for an Approved Project _____

Grant Title (s) _____
An Expedited Review XXXX
A Departmental Level Review _____
Signature of Chair / Designate

The review committee considers the research procedures and practices as explained by the applicant in this application, to be acceptable on ethical grounds.

1. Prof. René Turcotte
Department of Kinesiology and Physical Education

Signature / date _____

2. Prof. Ron Morris
Department of Integrated Studies in Education

Signature / date _____

3. Prof. Ron Stringer
Department of Educational and Counselling Psychology

Signature / date _____

7. Member of the Community

Signature / date _____

Mary H. Maguire Ph. D.
Chair of the Faculty of Education Ethics Review Committee
Associate Dean (Academic Programs, Graduate Studies and Research)
Faculty of Education, Room 230
Tels: (514) 398-7039/398-2183 Fax: (514) 398-1527

4. Prof. Kevin McDonough
Department of Integrated Studies in Education

Signature / date *Kevin McDonough* Apr: 122/03

5. Prof. Brian Alters
Department of Integrated Studies in Education

Signature / date *Brian Alters* May 5/03

6. Prof. Ada Sinacore
Department of Educational and Counselling Psychology

Signature / date *Ada Sinacore*

Mary H. Maguire May 12, 2003
Signature / date

Office Use Only

REB #: 273-0403
(Updated January 2003)

APPROVAL PERIOD: MAY 12, 2003 to MAY 12, 2004

MCGILL UNIVERSITY / FACULTY OF EDUCATION
CERTIFICATE OF ETHICAL ACCEPTABILITY FOR FUNDED AND NON FUNDED RESEARCH INVOLVING HUMANS
CHECKLIST
(Updated August 2002)

The items indicated below require your attention before the Ethical Review Committee can process and approve your research project. Please make sure to include all of them and refer to the attached Ethical Research Procedures and Ethical Research Guidelines. *Incomplete applications and or applications with errors will be sent back to the applicant.*

1. X Indicate the Type of Review :
Full Review _____ Expedited Review XXXX
Annual Renewal of Approved Project _____
Departmental Approval as Part of Undergraduate or Graduate Course Work _____
2. X Certificate of Ethical Acceptability for Funded and Non Funded Research Involving Humans.
It includes:
o name of the applicant and signature
o name of the supervisor and signature (if applicable)
o title of the research project
o degree program (if applicable)
o granting agency (if applicable)
3. X A clear, comprehensible Statement of Ethics of Proposed Research and your signature.
(Refer to form - items 1 to 6).
4. X An abstract or brief summary (1-2 pages) of the research proposal.
5. 2 Submission requirements:
A. For Expedited Review submit 2 copies of the certificate and statement forms, and a summary (1-2 pages) or abstract of the research proposal.
B. For Full Review submit 8 copies of the certificate and statement forms and the entire proposal.
C. For Departmental Review submit 1 copy of the completed statement form and the certificate signed by the Department Chair, or Designate
6. X A copy of informed consent form(s) and procedures for obtaining free and informed consent.
The informed consent must be written in language that is appropriate for the participants.
7. X If applicable, a copy of the instrument to be used for collecting the data (e.g. questionnaire, interview, etc.) or, if using a commercial test, include a copy of the test and a brief description of it.
8. N/A Any other certificate of ethics which funding agencies may require.
9. N/A For Review of Research in other jurisdictions or countries: Submit a copy of Ethics Review Approval from the relevant agency or institution for research to be performed outside the jurisdiction or country of the institute which employs the researcher.

IMPORTANT POLICY STATEMENTS:

- Approval of ethics acceptability must be obtained before data collection for a funded or non funded project.
- All funded and non funded research undertaken at McGill University must be verifiable.
- All researchers must be able to have respondents confirm that they gave specific data.
- Confidentiality must be ensured. It can be generally achieved by establishing a system such as matching identification numbers with names and placing the names in a sealed envelope that is kept in a secure place.
- The exact procedures used should be clearly explained in (6.1) of the statement of ethics form.
- All researchers in the Faculty of Education must obtain the name and informed consent of all research participants 18 years of age or older. For populations under 18, in most circumstances, informed consent must be obtained from parents or guardians as well as children.

Submit to the

McGill University
Office of the Associate Dean
(Academic Programs, Graduate Studies and Research)
Faculty of Education, Room 230

Telephones: (514) 398-7039 or 398-2183

Fax: (514) 398-1527

Updated May 2001

MCGILL UNIVERSITY FACULTY OF EDUCATION
STATEMENT OF ETHICS OF PROPOSED RESEARCH

Principal Researcher: Michael JD Sutton, Ph.D. Student, Graduate School of Library and Information Studies

Title of Dissertation Research Project: Examination of the Historical Sensemaking Processes Representing the Development of Knowledge Management Curricula in Universities: Case Studies Associated with an Emergent Discipline

It is assumed that the responses to the questions below reflect the author's (or authors') familiarity with the ethical guidelines for funded and non funded research with human subjects that have been adopted by the Faculty of Education and that responses conform to and respect the Tri-council Policy Statement: Ethical Conduct for Research Involving Humans (1998).

1. Informed Consent of Subjects

Explain how you propose to seek informed consent from each of your subjects (or should they be minors, from their parents or guardian). Informed consent includes comprehension of the nature, procedures, purposes, risks, and benefits of the research in which subjects are participating. Please append to this statement a copy of the consent form that you intend to use.

Informed Consent will be sought in writing and verbally from the subjects. In advance of interviews, an Informed Consent Form will be forwarded to the subjects explaining the purpose, nature, procedures, risks, and benefits of participating as a subject in the research initiative. Subjects will be instructed that it is imperative they read the material carefully and decide if they wish to participate in the research study.

At the beginning of the interview, the informed consent form will be reviewed again verbally, giving special emphasis to the Statement of Voluntary Participation (section 4 of the form). If the subject is in agreement with the content of the Informed Consent Form, then the subject will be asked to date and sign the form, as well as initial each page.

2. Subject Recruitment

2.1 Are the subjects a "captive population" (e.g., residents of a rehabilitation centre, students in a class, inmates in a penal establishment)?

The subjects are not from a "captive population." The researcher anticipates that the subjects within each of two case studies will be members of one or more of the following five relatively uniform clusters of individuals:

1. academic section head - the one who retains significant authority, responsibility, and accountability for the program (or academic stream), and is referred to as the Institutional KM Program Authority in this study;
2. faculty - those who teach at least one course, carry out significant research, or supervise Ph.D. students in the institution and possess a non-trivial association with the design of the KM program;
3. academic consultants - those who designed courses or the full program;
4. post-doctoral fellows and researchers - those who may have provided some advice or research for the KM program;
5. administrative staff - those who may have made a significant contribution to the development of the program design.

2.2 Explain how institutional or social pressures will not be applied to encourage participation. (See attached guidelines)

The subjects are strictly voluntary based upon their interest to contribute to the expanding body of knowledge associated with the emergent field of knowledge management. Absolutely no institutional or social pressures will be applied to encourage participation.

2.3 What is the nature of any inducement you intend to present to prospective subjects to persuade them to participate in your study?

In order to persuade subjects to participate in this study the researcher has proposed the following inducements:

- Subject will receive personal and professional satisfaction because of their significant and valuable contribution to the body of knowledge encompassing knowledge management and advancement of this evolving area as an emergent discipline;
- A digital copy of the researcher's completed dissertation will be made available;
- Digital copies of any of the researcher's publications that incorporate mention of the findings within 2 years of the completion of the dissertation will be made available; and
- Arrangements will be proposed to furnish a guest lecture or debriefing on the results of the study at the institution, based upon the availability of funds to cover travel, living and accommodation expenses.

2.4 How will you help prospective participants understand that they may freely withdraw from the study at their own discretion and for any reason?

The researcher has indicated in the Informed Consent Form that the subject is "free to withdraw at any time from the study without any penalty or prejudice." This option will be explained again verbally at the commencement of the interview.

3. Subject Risk and Well-being

What assurance can you provide this committee (as well as the subjects) that the risks, physical and/or psychological, that are inherent to this study are either minimal or fully justifiable given the benefits that these same subjects can reasonably expect to receive?

The researcher anticipates that the physical and/or psychological risks inherent for subject participation in this study are virtually non-existent. The protocols do not include any experimentation, and rely solely upon the individuals' memory of the experiences associated with the design of an educational program. The elicitation of the individuals' memories of their experiences is not anticipated to be either traumatic or psychologically disturbing.

4. Deception of Subjects

4.1 Will the research design necessitate any deception to the subjects?

No, the research design does not use any deception with the subjects.

4.2 If so, what assurance can you provide this committee that no alternative methodology is adequate?

N/A

4.3 If deception is used, how do you intend to nullify any negative consequences of the deception?

N/A

5. Privacy of Subjects

How will this study respect the subjects' right to privacy, that is, their right to refuse you access to any information that falls within the private domain?

The subjects' right to privacy will be respected. The Informed Consent Form explicitly describes this right to refuse access to any information that falls within the private domain. The researcher will also draw the subject's attention to this right at the commencement of the interview.

6. Confidentiality/Anonymity

6.1 How will this study ensure that (a) the identity of the subjects will be concealed and (b) the confidentiality of the information, which they will furnish to the researchers or their surrogates will be safeguarded?

- (a) The identity of the subject will be concealed by using coded pseudonyms for informant's name, the name of the institution, and the names of any departments mentioned in transcripts of the interviews or documentation. In addition, only the codes would be used in any publications resulting from this research.
- (b) The confidentiality of the information provided by the institution and the informants will be safeguarded. The researcher will preserve personal and institutional confidentiality and protect all material entrusted to him for this study. The list of pseudonyms for the original names will be stored on diskette in a locked cabinet. The researcher will indicate to candidate institutions that he is willing to sign an Institutional Confidentiality Agreement, if it is deemed necessary by the institution, in order to have information released to the researcher for the study.

Every attempt will be made to keep the collected study records confidential—(data and document repositories, interview transcripts, and notes). These records will be stored in a locked cabinet/safe at the researcher's home/office for at least 10 years after the end of this research. When resident on a computer, the digital material will be stored in a secure database protected by a password. Otherwise the digital material will be stored on diskettes in a locked cabinet/safe. The audiotapes will be destroyed upon completion and verification of the transcription. Although the rights and privacy of the institution and informant will be maintained, the Ethics Review Committee of the McGill University Faculty of Education and the Dissertation Advisor would have access to the study records for verification upon request.

6.2 If applicable, explain how data will be aggregated in such a way that even should the identity of the participants become known, no reasonable inference could be made about the performance, competence, or character of any one of these participants. If data will not be aggregated, provide a detailed explanation.

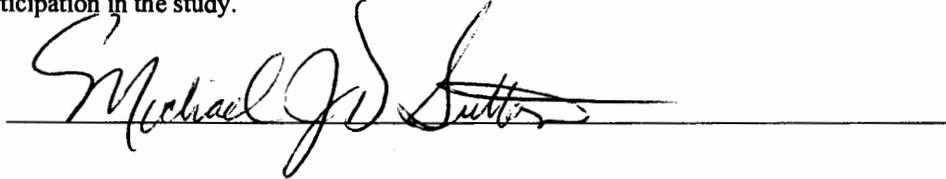
The research design is a qualitative approach based upon the use of case study and grounded theory methods. Therefore, data will not be aggregated as it might be in a quantitative approach, the data will be interpreted for meaning. The research paradigm is based upon constructivism and the contextual framework is based upon Weick's theory of sensemaking.

The subjects, by participating in the research study, are volunteering to share their thoughts, feelings and experiences within the context of the design of a graduate educational program. This participation infers that they will share their thoughts on issues, concerns, problems, and challenges associated with performance, competence, or character of any one of the other subjects or the institution itself.

If data is collected that may compromise the identity of any of the subjects, their performance, competence, or character, discretion will be used to diminish any inference without compromising the integrity of the study. For any serious situation that might arise, advice will be sought from my dissertation advisor and the data would likely be dropped from the study before a significant negative inference could be drawn about a particular subject.

Therefore, the researcher anticipates using quotations and excerpts, (with pseudonyms), in reporting the findings. The onus will be on the researcher to maintain strict confidentiality and anonymity of the institution as well as all of the informants. However, the researcher cannot accept responsibility for disclosure to third parties if the institution or its subjects decide to reveal their participation in the study.

Signature of
researcher:

A handwritten signature in black ink, appearing to read "Michael J. Sutton", is written over a horizontal line. The signature is cursive and somewhat stylized.

If this project has been submitted to another ethics committee, please note the particulars:

N/A

**Submit this statement to:
Office of the Associate Dean
(Academic Programs, Graduate Studies and Research)
Faculty of Education, Room 230
Tel: (514) 398-7039/2183
Fax: (514) 398-1527**

ATTACHMENT-1

ABSTRACT OF THE RESEARCH PROPOSAL

TITLE: Examination of the Historical Sensemaking Processes Representing the Development of Knowledge Management Curricula in Universities: Case Studies Associated with an Emergent Discipline

PRINCIPAL RESEARCHER: Michael JD Sutton, Ph.D. Student, Graduate School of Library and Information Studies, McGill University, 3459 McTavish St., Montréal, Québec, Canada H3A 1Y1, (613-526-3784).

PURPOSE: The purpose of this proposed study is to examine the historical sensemaking processes that occurred during the design and development of graduate programs in Knowledge Management (KM). An historical examination is proposed of the chronological sensemaking experiences of the KM program designers. The objective of using case study research method will be the collection of interview data that reflects the personal views, circumstances and experiences of the informants. The investigation will generate new knowledge about the sensemaking experiences of the designers of new curricula, with particular attention paid to the emergent discipline referred to as knowledge management.

SIGNIFICANCE OF THE STUDY: This study will be significant because KM—as a program of study—has received little attention or comprehensive study. The selection of two authentic sensemaking cases will emphasize the complexity and challenge surrounding the development of any graduate program of instruction. However, this study will actually look at the challenge surrounding the management of knowledge about knowledge management, a non-trivial intellectual exercise. The study will significantly contribute to the challenge of definitions within the phenomenon of KM, resulting in an ontology and taxonomy of critical terms associated with this emerging discipline and KM programs.

PROCEDURES: The researcher will request potential participation with an academic section head where a graduate KM Program is offered. The researcher will contact all prospective informants suggested by the section head. If the candidates agree to become research informants, the researcher will schedule taped interviews, conduct the interviews, and collect documentation about the KM program.

ATTACHMENT-2

INFORMED CONSENT FORM
INFORMED CONSENT TO PARTICPATE IN RESEARCH
McGill University, Faculty of Education

Office of the Associate Dean (Academic Programs, Graduate Studies and Research)

Principal Researcher: Michael JD Sutton, Ph.D. Student, Graduate School of Library and Information Studies

Title of Dissertation Research Project: *Examination of the Historical Sensemaking Processes Representing the Development of Knowledge Management Curricula in Universities: Case Studies Associated with an Emergent Discipline*

This Informed Consent Form will explain the purpose, nature, procedures, risks, and benefits of participating as an informant in this research initiative. It is imperative that you read this material carefully and decide if you wish to participate in the research study.

1. PURPOSE: The purpose of this proposed study is to examine the historical sensemaking processes that occurred during the design and development of graduate programs in Knowledge Management (KM). An historical examination is proposed of the chronological sensemaking experiences of the KM program designers. The investigation will generate new knowledge about the sensemaking experiences of the designers of new curricula, with particular attention paid to the emergent discipline referred to as knowledge management.

2. PROCEDURES: The researcher will request potential participation with an academic section head where a graduate KM Program is offered. The researcher, guided by the suggestions of the academic section head, will identify candidate informants from the university faculty and staff who may fit into the following roles:

- academic section head - the one who retains significant authority, responsibility, and accountability for the program (or academic stream), and, in this study, is referred to as the KM program site authority;
- faculty - those who teach at least one course, carry out significant research, or supervise Ph.D. students;
- academic consultants - those who designed courses or the program;
- post-doctoral fellows and researchers - those who have provided some advice or research for the KM program;
- administrative staff - those who may have made a significant contribution to the development of the program design.

INITIALS OF INFORMANT _____

The researcher will contact all prospective informants, review the project purpose, and explain the Informed Consent Forms. If the candidates agree to become research informants, the researcher will schedule interviews, explain that the interview will be taped, conduct the interviews, and collect documentation about the KM program.

ANONYMITY:

To ensure anonymity, the researcher will use coded pseudonyms for informant's names, the name of the institution, and the names of any departments in transcripts of the interviews or documentation. In addition, only the codes would be used in any publications resulting from this research.

CONFIDENTIALITY:

The researcher will preserve personal and institutional confidentiality and protect all material entrusted to him for this study. The list of pseudonyms for the original names will be stored on diskette in a locked cabinet. The researcher is willing to sign an Institutional Confidentiality Agreement, if it is deemed necessary by the institution in order to have information released to the researcher for the study.

Every attempt will be made to keep the collected study records confidential—(data and document repositories, interview transcripts, and notes). These records will be stored in a locked cabinet/safe at the researcher's home/office for at least 10 years after the end of this research. When resident on a computer, the digital material will be stored in a secure database protected by a password. Otherwise the digital material will be stored on diskettes in a locked cabinet/safe.

PRIVACY:

The informant's right to privacy will be respected. The informant has the right to refuse the researcher access to any information that falls within the private domain.

ANTICIPATED USE:

Information gained through the interviews and documentation, (including anonymous quotations), will be used by the researcher in a published dissertation produced as a result of this qualitative study. Findings of the study may be published in journal articles, books, conference proceedings, or other reports; or presented at lectures and meetings. The researcher will retain intellectual property rights to the dissertation and publication of findings.

3. CONDITIONS OF PARTICIPATION:

TASKS TO BE PERFORMED: The researcher will tape face-to-face interviews and collect appropriate documentation that describes the KM program or explains experiences associated with its design.

INITIALS OF INFORMANT _____

INFORMANT’S RESPONSIBILITIES: The informant will be requested to schedule and attend two interview sessions of 60-90 minutes each at a convenient site and time. Informants are encouraged to actively participate by responding to a semi-structured interview question protocol.

INCONVENIENCES: Depending upon the informant’s experiences, s/he could expect to be inconvenienced by face-to-face interaction in the 2-3 hours of interviews. In addition, up to an additional hour may be required to assemble and forward relevant documentation to the researcher.

BENEFITS: This study is anticipated to result in personal and professional satisfaction for the informant. The informant’s participation will help achieve a significant and valuable contribution to the body of knowledge encompassing knowledge management and advancement of this evolving area as an emergent discipline. In addition, the researcher will make available a digital copy of his completed dissertation, as well as digital copies of any of his publications that incorporate mention of the findings within 3 years of the dissertations completion. Finally, the researcher would be willing to arrange a guest lecture or briefing on the results of the study at the institution if the travel, living and accommodation expenses could be reimbursed.

RISKS: The researcher does not anticipate any risks associated with the study, the interviews, or the document collection.

4. VOLUNTARY PARTICIPATION:

After reading this consent form:

- I understand the purpose of this study and know about the risks, benefits, and inconveniences that this research project entails.
- I understand that I am free to withdraw at any time from the study without any penalty or prejudice.
- I understand how confidentiality will be maintained during this research project.
- I understand the anticipated uses of data, especially with respect to publication, communication and dissemination of results.

I have carefully studied the above and understand my participation in this agreement. I freely consent and voluntarily agree to participate in this study.

SIGNATURE OF INFORMANT _____ DATE _____
[Printed Name of the Informant]

SIGNATURE OF RESEARCHER _____ DATE _____
Michael J.D. Sutton

CONTACT FOR QUESTIONS :

If you have any questions, you may call Michael JD Sutton at (613) 526-3784 or Dr. France Bouthillier, GSLIS Dissertation Advisor at (514) 398-3362. You may also call the Chairman of the Faculty of Education Ethics Review Committee, Dr. Mary H. Maguire at (514) 398-7039/398-2183 for any questions you may have about your rights as an informant in this research study.

INITIALS OF INFORMANT _____

ATTACHMENT-3

PROCEDURES FOR OBTAINING INFORMED CONSENT

Informed Consent will be sought in writing and verbally from the subjects. In advance of interviews, an Informed Consent Form will be forwarded to the subjects explaining the purpose, nature, procedures, risks, and benefits of participating as a subject in the research initiative. Subjects will be instructed that it is imperative they read the material carefully and decide if they wish to participate in the research study.

At the beginning of the interview, the informed consent form will be reviewed again verbally, giving special emphasis to the Statement of Voluntary Participation (section 4 of the form). If the subject is in agreement with the content of the Informed Consent Form, then the subject will be asked to date and sign the form, as well as initial each page.

ATTACHMENT-4
INSTRUMENTS TO BE USED FOR DATA COLLECTION

**ADDENDUM A.1: PRE-SELECTION PROTOCOL – MANDATORY & DESIRABLE
CRITERIA TABLES**

The insitituion would fill in the requested information in the next two tables and return to the researcher in order for the researcher to determine if they meet the selection cirteria to be a case study.

#	<i>Mandatory Criteria</i>	<i>Institutional Response</i>
M1	How many years has your KM program been operational?	
M2	How many full-time academic staff members are associated with the KM program?	
M3	Does the KM Program result in a graduate degree that specifically references the KM emphasis? What is the title of the degree?	
M4	What is the size of the first cohort representing student enrolment for the KM Program? If there has been more than one cohort, what have been their sizes?	

#	<i>Desirable Criteria</i>	<i>Institutional Response</i>
D1	Please estimate the volume and format of available documentation about the KM program according to the Preliminary Documentation Checklist.	See Attachment
D2	Please estimate the number of individuals who participated in the KM program design who have expressed considerable interest and commitment in participating in the research study?	
D3	Are the potential informants willing to invest the indicated interview time?	

**ADDENDUM A.2: PRE-SELECTION PROTOCOL – PRELIMINARY
DOCUMENTATION CHECKLIST**

The institution would fill in the Preliminary Documentation Checklist and return to the researcher to help determine if they meet the selection criteria to be a case study.

#	<i>Availability of Documentation at the Institution?</i>	Can this information be easily located (Y/N)?	Can this information be released to the researcher (Y/N)?	In what format is it available (D-digital, H-hardcopy, or B-both)?
1	Institutional Background Material:			
	• brief graduate school history			
	• organizational overview of the KM program as it is situated within the graduate school			
2	Descriptions of informants' backgrounds:			
	• demographics, qualification profiles, length of time at the current university, and relevant career and publication histories of study informants			
2	Descriptions of KM program design source material and process documentation:			
	• anecdotes			
	• audiovisual material			
	• bibliographies			
	• books titles or book chapter citations			
	• briefing notes			
	• case studies			
	• commentaries			
	• computer software			
	• conference proceedings			
	• departmental program submissions			
	• directories			
	• doctoral dissertations			
	• editorials			
	• glossaries			
	• interviews			
	• journal titles and journal article citations			
	• letters			
	• listserv records			
	• literature reviews			
	• masters' theses			
	• marketing material,			

	• meeting agenda and minutes,			
	• ontologies,			
	• other miscellaneous material,			
	• personal notes,			
	• pictures/photos posters,			
	• plans,			
	• research studies,			
	• reports,			
	• standards,			
	• systematic reviews,			
	• teaching materials,			
	• web pages/websites			
3	KM Program Descriptions:			
	• overall KM program description			
	• program structure and curriculum description			
	• learning outcomes/competencies			
	• learning methodologies and approaches used			
	• current cohort size			

ADDENDUM B.1 – DOCUMENTATION COLLECTION PROTOCOL

The informants will be asked to locate as much of the following material as possible before the interview takes place:

#	<i>Availability of Documentation at the Institution?</i>	Document ID	Format (D-digital, H-hardcopy, or B-both)?
1	Institutional Background Material:		
	• brief graduate school history		
	• organizational overview of the KM program as it is situated within the graduate school		
2	Descriptions of informants' backgrounds:		
	• demographics, qualification profiles, length of time at the current university, and relevant career and publication histories of study informants		
2	Descriptions of KM program design source material and process documentation:		
	• anecdotes		
	• audiovisual material		
	• bibliographies		
	• books titles or book chapter citations		
	• briefing notes		
	• case studies		
	• commentaries		
	• computer software		
	• conference proceedings		
	• departmental program submissions		
	• directories		
	• doctoral dissertations		
	• editorials		
	• glossaries		
	• interviews		
	• journal titles and journal article citations		
	• letters		
	• listserv records		
	• literature reviews		
	• masters' theses		
	• marketing material,		
	• meeting agenda and minutes,		
	• ontologies,		
	• other miscellaneous material,		
	• personal notes,		
	• pictures/photos posters,		

	• plans,		
	• research studies,		
	• reports,		
	• standards,		
	• systematic reviews,		
	• teaching materials,		
	• web pages/websites		
3	KM Program Descriptions:		
	• overall KM program description		
	• program structure and curriculum description		
	• learning outcomes/competencies		
	• learning methodologies and approaches used		
	• current cohort size		

ADDENDUM C.1: SEMI-STRUCTURED INTERVIEW PROTOCOL – GENERAL

OUTLINE OF TOPICS

General Outline of Topics sent to the informants in advance fo the interview:

	<i>Topics for the Interviewee</i>
TOMBSTONE INFORMATION	
•	Name, job title, primary job role/function, number of years in the department, gender, age (if easily shared), etc.
•	Your role during the KM program design and development process
TIMELINE	
•	Timeline of major activities and critical milestones
LACK OF AVAILABLE INFORMATION	
•	Your coping strategy the lack of a designated body of knowledge for KM
•	Challenges in terms of group instability, frequency of change and direction, problems, and issues
•	Initial definitions of KM
•	Sources used to help reduce ambiguity and contradiction with definitions and key concepts?
SOCIAL ENVIRONMENT	
•	Composition of the design group
•	Interaction process of the group members
ORGANIZATIONAL IMPERATIVE	
•	The need for a KM program
•	Goal, objectives and vision that kicked-off the KM design process
•	The components chosen for the KM educational program
DOCUMENTATION	
•	Documentation that could help shed light upon the process of making sense

**ADDENDUM C.2: SEMI-STRUCTURED INTERVIEW PROTOCOL – DETAILED
INTERVIEWER QUESTIONS**

The following Detailed Interviewer Questions will form a detailed framework of inquiry for informant interviews and are grouped according to Weick's 'Seven Properties of Sensemaking.' They are also prioritized into primary (1st) and secondary (2nd) questions in case an informant can only attend one interview session of 60-90 minutes.

It is not the intention of the researcher to ask all the questions. The exact line of inquiry will be directed informally, based on responses to previous questions and data uncovered during the interview.

<i>Weick's Sensemaking Properties</i>			
	<i>Questions</i>	<i>1st</i>	<i>2nd</i>
GROUNDING IN IDENTITY CONSTRUCTION			
1	Confirm name, job title, primary job role/function, number of years in the department, gender, age (if easily shared), etc.	X	
2	Could you describe the goal, objectives and vision that kicked-off the KM design process?	X	
3	Could you describe your role during the KM program design and development process?	X	
RETROSPECTIVE			
4	Could you review the preliminary timeline of major activities and critical milestones associated with the evolution of the knowledge management program and suggest any additions, modifications, or deletions?	X	
5	Could you describe how you coped with the uncertainty associated with the lack of a designated body of knowledge for KM?	X	
<i>Follow-up probes (if necessary):</i>			
a.	How did you decide what to do about this lack of definitive information about KM as a discipline?		
b.	Sometimes we have to make up what we don't know. How did you select candidate material that would comprise a hypothetical body of knowledge about Knowledge Management?		
c.	How did you make sense of what material to use, discard, include, and exclude in the reading lists?		

d.	Did you contact individuals, advisors, or groups who were external to your department to try and get additional information? If so, who did you contact?		
6	Were there any specific comments you remember making about KM when this initiative began?		X
	<i>Follow-up probes (if necessary):</i>		
a.	Were other projects going on at that time?		
b.	What were they?		
7	Was there anything or anybody that you remember while the KM program was under design and development that could have been helpful to you but you did not use or contact?		X
ENACTIVE OF SENSIBLE ENVIRONMENTS			
8	Could you describe any environmental turbulence in terms of group instability, frequency of change and direction, problems, issues, and challenges facing the development of the KM program?	X	
9	Do you think you (and/or the group) did a good job on the design of the KM program? Why?		X
SOCIAL			
10	Who was on the design group, and how were they selected?	X	
	<i>Follow-up probe (if necessary):</i>		
a.	Were you the group leader or a member? If only a member, whom led the design group in this process?		
b.	Do you generally have strong institutional support when designing a new program, or was this your first?		
c.	Are all of the members who participated in the KM program design still at you institution? Who is not?		
11	How did you and the group members interact during the KM program design:	X	
a.	brainstorming sessions,		
b.	telephone calls/teleconferences,		
c.	emails,		
d.	face-to-face group meetings,		
e.	digitally supported collaboration,		
f.	formal review sessions,		
g.	attended conferences together,		
h.	reported on books and articles read?		

ONGOING			
12	What incident or situation generated the need for designing a KM program?	X	
	<i>Follow-up probes (if necessary):</i>		
	a. Was it financial, political, or intellectual?		
	b. Did it come about by collaboration or by a strategy that was being pursued?		
	c. If a strategy, what was the objective, (increasing the faculty team, increasing student enrollment, stimulating the department with a new program, cooperating with another department)?		
13	Do you remember what it was that moved you to get involved in the KM program design?		X
	<i>Follow-up probes (if necessary):</i>		
	a. Who initially proposed a KM program? Why?		
	b. Why did you decide to become a member of the group?		
	c. Was your membership on the group by invitation or was it delegated?		
FOCUSED ON AND BY EXTRACTED CUES			
14	How did you and the group initially define KM?	X	
15	Could you identify the sources you used to help reduce ambiguity and contradiction with definitions and key concepts?	X	
	<i>Follow-up probes (if necessary):</i>		
	a. Did you select somebody else's reading list(s)/bibliography for KM or did you create your own?		
	b. How did you identify the different categories on the reading list(s)?		
16	What major obstacles were encountered and overcome in order to successfully design the KM program?		X
17	Do you have any documentation in your possession that you feel could help shed light upon the process of making sense of KM during the design of the KM program? Why is the material you selected important?	X	

DRIVEN BY PLAUSIBILITY RATHER THAN ACCURACY.			
18	What did you feel should be in a KM educational program? Why?	X	
19	Which components were finally included in the KM program design and which components were discarded or put on hold?		X
<i>Follow-up probes (if necessary):</i>			
a.	How did you reach agreement upon the program components?		
b.	Did the contents of the program change radically over time, or did the original vision provide stability?		
A final three-part question for the informant:			
20	Could you try to describe the gap between KM, as you now understand it, and KM as you thought you understood it at the beginning of the KM program design process?	X	
21	What is the one piece of advice would you give to a group at another institution tasked with developing a new KM program?	X	
22	Why is this one piece of advice important?	X	

APPENDIX E – PRE-SELECTION PROTOCOL

E.1 – Request for Expression of Interest Letter/Email

[Date]

[Academic Section Head Name & Address]

Hello [Academic Section Head]

SUBJECT: Expression of Interest in Participating in a Knowledge Management (KM) Research Study

I am contacting you to ascertain the level of interest your department and institution would have in participating in a dissertation research study. I am a Ph.D. candidate at McGill University in Montréal, Québec, [Canada]. I have initiated my dissertation research project on KM curriculum.

The study will help me construct cases studies about how individuals and groups tried to make sense of a phenomenon (e.g., an emergent discipline) that is poorly defined and lacks an agreed upon body of knowledge. Data about the historical sensemaking processes representing the development of KM curriculum will be captured. The target informant audience will be those individuals who participated in the design of the graduate KM program. A research summary of the study is attached for your review.

If your institution meets the selection criteria and is selected to be a candidate case study, I would be willing to travel to your campus for a 1-3 week period of field work, depending upon the number of interested informants. However, I am constrained by my travel, living, and accommodation budget for the fieldwork.

I would arrange to meet each informant in a comfortable setting where there would be few interruptions. The anticipated interviews would comprise two informal 60-90 minute semi-structured sessions. The sessions will be scheduled at the informant's convenience. It would be my expectation that I could tape the interviews and transcribe them at a later time.

I would ask each informant questions about their personal experiences during the KM program design process: how they got started, how they made sense of the emergent KM field, what group-related sensemaking experiences influenced the program's design, and how they coped with ambiguity and contradiction concerning information about the KM field? I would also collect documentation from them and the institution that has a bearing upon their experiences.

I would use coded pseudonyms for informant's names, the name of your institution, and the names of any departments in transcripts of the interviews, as well as in any published reports of this research, unless otherwise requested. I would preserve personal and institutional confidentiality and protect all material entrusted to me for this study. Informants would be free to withdraw from the research at any time and to have

their data removed from the study. I would be sincerely grateful if you would confer with your colleagues who may have been intrinsic to the design of your KM program.

Please contact me at the coordinates below if I can answer any questions you might have about this study. If you agree to be considered as a case study candidate would you please fill in the attached Mandatory and Desirable Tables requesting information about the KM program and enter simple responses in the appropriate columns of the attached Preliminary Documentation Checklist. This matrix will help me to assess the quality of documentation in support of the KM program design experience—an important criteria for the success of my study.

Even if you decide not to participate, I would sincerely appreciate your reply indicating your regrets, since this would help me confirm that you received this email.

Regards,

Michael JD Sutton
Ph.D. Student, Graduate School of Library and Information Sciences
McGill University

[Details of address & email coordinates here]

Attachments (3): Mandatory & Desirable Criteria Tables
 Research Summary
 Preliminary Documentation Checklist

APPENDIX F – PRE-INTERVIEW PROTOCOL

F.1 – Formal Institutional Contact Letter/Email

[Date]

[Academic Section Head Name & Address]

Hello [Academic Section Head]

SUBJECT: Your Institution's Selection to Participate in the Knowledge Management (KM) Research Study on KM Curriculum

I am happy to inform you that I have selected your institution as a candidate case study for my dissertation research. This is based upon your replies in the expression of interest and the constraints of my project budget. As you will recollect, my dissertation research project will be on Knowledge Management Curriculum. I seek to understand the sensemaking experiences of the individuals and the group as a whole that participated in the design of a KM program.

I have enclosed an Institutional Permission Form, Informed Consent Form, and the Documentation Collection Protocol for your review. I will require your authorization for your institution's commitment to participate. Please use the letter as a template to print the form on your letterhead, sign/date it where indicated, and return it to me within 2 weeks by fax or regular mail. If the University requires a Non-Disclosure Agreement in order to eventually release information to me for the study, please forward a copy to me immediately.

When you fax or mail the signed Institutional Permission Form to me, please send a separate email identifying a suggested contact list of faculty and/or staff who are interested in being study informants, (including titles, telephone numbers and email addresses). I will then forward to each of them an introductory package of information. Subsequently, I will arrange a time to call them and discuss any questions they might have. Could you also forward some suggested date ranges when you feel all the identified informants would likely be available for interviews?

Although I will be attaching a copy of the Informed Consent Form to the email I send to the informants, you may wish to forward it to your colleagues in advance of their introductory package. In preparation for my visit I would appreciate it if you could review thoroughly the Documentation Collection Protocol.

I will be collecting from you documentation of a "corporate nature" that may not be available from the individual informants. I will also be requesting documents in the possession of the informants that may be relevant to their sensemaking experiences. We can discuss this subject in more detail when I follow-up this email by a phone call.

The purpose of my case study research will be to seek an explanation of the how and why questions behind the individual, group, and organizational behaviour that was the basis

for the design and development of KM programs. Given the lack of clarity typified in this emerging phenomenon of KM, the primary research question will be: How do the academic KM program designers make sense of the ambiguous and emerging field of KM in order to create a pedagogical framework for conveying learning about KM?

I anticipate that this study will produce insightful and meaningful information that will be helpful to educators, especially those considering the design of KM programs. I sincerely appreciate your institution's willingness to participate in this project, and I look forward to meeting with you soon.

Regards,

Michael JD Sutton
Ph.D. Student, Graduate School of Library and Information Sciences
McGill University

[Details of address & email coordinates here]

Attachments (3): Institutional Permission Form
 Informed Consent Form
 Documentation Collection Protocol

F.2 – Institutional Permission Letter

[Letterhead of the University Department]

[Date]

Michael J.D. Sutton
Ph.D. Student, McGill University
Graduate School of Library and Information Studies
3459 McTavish St.,
Montréal, Québec, Canada
H3A 1Y1

SUBJECT: Institutional Permission Letter

Dear Mr. Sutton,

For the purpose of completing your dissertation at McGill University, you have the permission of our institution to reference and use information from [University and Department Name] collected for your case study. This information will be held in confidence by you and will be stored and retained in accordance with your Informed Consent Form.

Anonymity Requested (pls. initial): YES | _____ | NO | _____ |

If I can help you with additional information, please let me know.

Regards,

[Signature of the Academic Section Head]

[Printed Name of the Academic Section Head]

F.3 – Informant Contact Letter/Email

[Date]

[Informant Name & Address]

Hello [Informant],

Subject: Your Potential Participation in a Knowledge Management (KM) Research Study

I am a Ph.D. candidate at McGill University in Montréal, Québec, [Canada]. I have initiated my dissertation research project on Knowledge Management Curriculum. I will be collecting data for two case studies of institutions offering graduate level KM programs. The study will be an important contribution to the emerging body of knowledge for KM by expanding our current understanding on how we decide what to teach about KM.

Given the lack of clarity typifying this emerging phenomenon of KM, the primary research question will be: How do the academic KM program designers make sense of the ambiguous and emerging field of KM in order to create a pedagogical framework for conveying learning about KM? I have previously contacted your department head, Dr. [Department Head Name], who has indicated that your institution would be interested in serving as one of my case studies.

Based on my discussions with Dr. [Department Head Name] I have established an interview list for this qualitative research study. I would like to schedule, via email, a time I could contact you by telephone, preferably the week of _____, 2003, to review the attachments to this email, and confer with you about a preferred a period of time for the interviews, based upon my field trip to your campus. We will establish tentative interview dates and times in our telephone conversation.

This letter contains two attachments you may have already previewed of from my correspondence with your Department Head: the Research Summary and Informed Consent Form. In preparation for our phone call, please read thoroughly all three documents so we can review any questions they might trigger. Upon receipt of your signed Informed Consent Form, I will forward a Documentation Collection Protocol and a Semi-Structured Interview Protocol in advance of my field trip. We can follow up at that time with any questions you might have.

Identifying information along with any data gathered during the study will be held confidential at all times. The anticipated interviews would comprise two informal 60-90 minute semi-structured sessions. The sessions will be scheduled at your convenience and it would be my expectation that I could tape the interviews and transcribe them at a later time for accuracy. If there is any potential issue with a taped interview, let's discuss it during our phone call.

I will ask questions about your personal experiences during the KM program design process: how you got started, how you (and the design group) made sense of the emergent KM field, what group-related sensemaking experiences influenced the program's design, and how you coped with ambiguity and contradiction concerning information about the KM field, etc.? I will also collect documentation from you that you feel has a bearing upon your experiences.

I will use coded pseudonyms for your name, the name of your institution, and the names of any departments in transcripts of the interviews, as well as in any published reports of this research, unless otherwise requested. I will preserve personal and institutional confidentiality and protect all material entrusted to me for this study. Informants are free to withdraw from the research at any time and to have their data removed from the study.

I anticipate that this study will produce a meaningful explanation of KM program design that will be valuable to educators and practitioners. At the study's conclusion, I would be happy to provide you with a summary of my findings, a copy of my dissertation, and copies of any related published papers. I sincerely appreciate your willingness to participate in this project, and I look forward to talking with you soon.

Regards,

Michael JD Sutton
Ph.D. Student, Graduate School of Library and Information Sciences
McGill University

[Details of address & email coordinates here]

Attachments (2): Research Summary
 Preliminary Documentation Checklist

APPENDIX G –TASKS, ACTIVITIES, AND ACTIONS BY A THOUGHT

LEADER

#	Important Thought Leadership Tasks and Activities Occurring in Both Cases
1	He/she attended a KM conference to become further informed about the field.
2	He/she constructed a multidisciplinary and crossdisciplinary team to conceive and design the program to draw upon the fields and disciplines of: Artificial Intelligence, Expert Systems, and Knowledge Engineering; Business, Commerce, and Management; Business Intelligence/Competitive Intelligence; Business Process Management and Reengineering; Complexity Science and Chaos Theory; Communications; Computer Science; Cybernetics; Data Warehousing and Data Mining; Ecology; Organizational Behaviour; Organizational Communications; Organizational Design; Organizational Memory; MIS/IS; Organizational Theory; IT and Telecommunications; Leadership; LIS; and Systems Thinking and Theory.
3	He/she selected and assembled internal curriculum design and development expertise.
4	He/she invited and brought together experienced external KM advisors, academics, and practitioners.
5	He/she passionately stimulated and constructed intellectual environment of self-learning about KM.
6	He/she commissioned the construction of competency and skills matrices to help align proposed learning outcomes.
7	He/she passionately promoted and defended the program throughout the approval processes and against any internal backlash that existed at the university.
8	He/she established a KM certificate/graduate diploma as a feeder into the Master's program.
9	He/she harmonized any weaknesses and shortcomings in the design by promoting the evolving nature of the program and inculcating an attitude of continuous improvement and refinement in the individuals hired to finalize, manage, and deliver the program.

Table G-1 Important Thought Leadership Tasks and Activities Occurring in Both Cases¹⁶

¹⁶ The tasks and activities are contiguously numbered across the first three tables to aid in uniquely referencing them.

#	Important Thought Leadership Tasks and Activities Occurring in C-1
10	He/she sponsored a market research study to ascertain potential interest by future students and businesses.
11	He/she contracted for multiple program evaluations in order to refine and seek endorsement by the S/PEA.
12	He/she requested the collection of a wide range of information about KM that could eventually suggest a definition and the elements of an evolving BOK.
13	He/she commissioned the architecture of a KM conceptual framework.
14	He/she was flexible and agile at replacing the degree title and positioning the program within the university in order to launch the offering at the earliest possible moment with meaningful content.
15	He/she instituted the offering to encompass a KM Graduate Diploma, MA in KM degree and MBA with KM concentration degree.
16	He/she acquired a personal perspective of KM through the emerging KM conceptual framework that permitted him/her to passionately promote and defend the program throughout the approval processes and against any internal backlash that existed in the University.
17	He/she facilitated a bottom-up approach to agreement on the definition of KM, the structure and content of the KM framework, and the curriculum design and development processes.
18	He/she recruited a full-time KM Program Director and adjunct faculty to effectively delivery the KM offerings.

Table G-2 Important Thought Leadership Tasks and Activities Occurring in C-1

#	Important Thought Leadership Tasks and Activities Occurring in C-2
19	He/she launched a suite of KM courses and seminars to build interest and understanding in colleagues about KM.
20	He/she spawned the KM Centre/Center as a point of focus for a certificate program that could evolve into a Master's degree.
21	He/she promoted learning about KM through a published KM bibliography and a collection of wide ranging material about KM that became a proxy for the BOK.
22	He/she proposed the use of an existing definition of KM.
23	He/she proposed the adoption of an existing KM conceptual framework.
24	He/she launched an offering at the earliest possible moment by extending existing courses with appropriate KM components.
25	He/she brought together key members of the LIS School, Business School, and Computer and Information Systems faculty.
26	He/she initiated the negotiation process between competing Deans early in the conception process for offering a joint program that also permitted customization based upon the unique needs of each school.
27	He/she authoritatively led the curriculum design and development processes.
28	He/she created a top-down approach to facilitating the program's development by applying coaching and mentoring methods where appropriate.
29	He/she instituted the offering to encompass a KM Certificate and a MS (or MSc) in KM degree.
30	He/she was appointed the KM Program Director and recruited existing tenure-track and adjunct faculty to deliver KM courses where current faculty lacked experience.

Table G-3 Important Thought Leadership Tasks and Activities Occurring in C-2

#	Proposed Personal Actions of a Thought Leader
1	provide strong thought leadership about the subject of KM.
2	attend one or more KM conferences and professional gatherings.
3	clearly articulate the program, curriculum, and course goals.
4	remain flexible and agile about degree titles and program placement within the university.
5	recruit a qualified, experienced, enthusiastic program director whose passion and vision paralleled the thought leader's or personally direct the program.
6	recruit full-time and adjunct faculty who could bring enthusiasm and passion with their combined academic qualifications and KM practitioner experience, or delegate the recruitment to the appointed program director.
7	promote an attitude of continuous improvement for the KM program.

Table G-4 Proposed Personal Actions of a Thought Leader

#	Proposed Team-Oriented Actions of a Thought Leader
1	construct a multidisciplinary and crossdisciplinary team, both internal and external to the institution.
2	select informed practitioners and scholars and invite them to become active members of an advisory board.
3	steer the advisory board and members of the curriculum development community toward the anticipated goals through either a top-down or bottom-up approach that was dictated by the culture of the institution.
4	passionately promote and defend the program.
5	facilitate the members of the Advisory Board and curriculum development community to quickly develop consensus on contentious issues that required resolution and closure, i.e., definition of KM, conceptual framework, elements of the BOK, learning outcomes, course content, etc.
6	arrange for the development of competency and skills matrices describing the KM graduate.
7	direct the collection of candidate KM definitions.
8	direct the collection of candidate material that would comprise a provisional BOK.
9	sponsor the development of a KM conceptual framework.
10	instill passion about the subject of KM into the learning community members.

Table G-5 Proposed Team-Oriented Actions of a Thought Leader

#	Proposed Organizational Actions of a Thought Leader
1	immediately build partnerships with other schools and faculties to create an interdisciplinary program within the university.
2	quickly negotiate the revenue splitting model for sharing student enrollment amongst the different programs.
3	efficiently and effectively maneuver the evolving KM program around the myriad of political, economic, intellectual, procedural, or cultural barriers that arose.
4	develop and sustain a targeted marketing and sales program that would locate a steady stream of interested applicants.
5	coordinate a focused market research study to identify potential sources for interested applicants and a target profile that could be used for marketing the program.
6	initially establish a KM certificate/graduate diploma program within a Centre /Center as a proof of concept.
7	extend existing courses with KM elements and use as a feeder into an eventual Master's program.
8	carry out a program evaluation within three to five years of the start date of the KM program.

Table G-6 Proposed Organizational Actions of a Thought Leader

APPENDIX H –TASKS, ACTIVITIES, AND ACTIONS BY TEAM MEMBERS

#	Important Team Member Tasks and Activities Occurring in Both Cases
1	The informants relied upon internally established pedagogical experience and procedures to design the KM program.
2	The informants became infected by the emerging vision for the new terminal graduate degree (what might be labeled an epiphany experience).
3	Taking the lead from the thought leader, they passionately threw themselves into the new learning experience.
4	They acquired and applied sufficient knowledge about the field labeled KM to adequately complete the tasks assigned and design and develop the curriculum and courses.
5	The participants coped with and overcame doubt and disbelief about KM exhibited in some University faculty members.
6	Their effort paid off with an offering that raised significantly the University's national and international visibility and reputation in KM.
7	The team leader–team member interaction resulted in a program offering that contained a unique synergy resulting from the participants' enacted knowledge about KM.

Table H-1 Important Team Member Tasks and Activities Occurring in Both Cases

#	Actions of a Community Member
1	rely upon an internally established pedagogical program design process and procedures.
2	experience an epiphany event that would build their passion for KM and commitment to the goal.
3	passionately embrace an organizational learning attitude.
4	sufficiently inform themselves about KM to contribute to the sensemaking and development processes.
5	remain undaunted by the doubt and disbelief exhibited by some of their colleagues.
6	contribute significantly to the university's visibility and reputation in KM.
7	work with the team leader to conceive, design, develop, and deliver a unique program offering.

Table H-2 Proposed Actions of a Community Member

APPENDIX I – PROPOSED OUTLINES OF COURSE TITLES AND TOPICS

#	Course Topics for a KM Program that Stresses Leadership and Sustainability
1	Action Research Analysis Methods and Techniques
2	Building Individual and Collaborative Leadership in Communities
3	Business Process Management and Team-Based Technologies
4	Capstone Seminar
5	Capstone Project
6	Corporate Sustainability in a Knowledge Economy
7	Foundational Principles of KM
8	International Strategies in Complexity Science
9	KM Standards, Specifications, and Protocols
10	Knowledge Assets: Intellectual Capital and Intellectual Property
11	Management and Organizational Information Systems
12	Specialized Topic
13	Techniques for Innovation and Creativity

Table I-1 Course Topics for a KM Master's Program (Leadership and Sustainability)

#	Course Topics for a MBA approach with a KM Concentration that Stresses LIS
1	Advanced Topics in KM
2	Capstone Course/Practicum
3	Data and Information Mining (Mgt)
4	Database Management Systems
5	Economics for Managers
6	Financial Forecasting
7	Fundamentals of Knowledge Management
8	Information Policy
9	Information Technology for Managers
10	Knowledge Technologies
11	Management Information Systems
12	Managerial Communications
13	Organizational Analysis and Design
14	Organizational Behaviour
15	Systems Analysis and Design
16	Telecommunications and Computer Networks

Table I-2 Course Topics for a MBA (LIS KM Concentration)

#	Course Topics for a KM Program that Stresses Library and Information Science
1	Advanced Topics in KM
2	Business and Competitive Intelligence
3	Capstone Course/Practicum
4	Data and Information Mining
5	Database Management Systems
6	Fundamentals of Indexing and Abstracting
7	Fundamentals of Information Architecture
8	Fundamentals of Knowledge Management
9	Information Policy
10	Information Resources Management
11	Internet and Reference Desk Search Strategies
12	Knowledge Organization
13	Knowledge Technologies
14	Management Information Systems
15	Metadata for the Internet
16	Organizational Analysis and Design
17	Project Management
18	Systems Analysis and Design

Table I-3 Course Topics for a KM Master's Program that Stresses LIS

#	Course Topics for a MBA Approach with a KM Concentration that Stresses Leadership and Sustainability
1	Capstone Consulting Project
2	Contemporary Business Environments
3	Corporate Financial Management
4	Foundational Principles of KM
5	Global Management Issues in the New Economy
6	Human Resources and Stakeholder Management
7	KM Standards, Specifications, and Protocols
8	Knowledge Assets: Intellectual Capital and Intellectual Property
9	Law of Contract: Types, Enforceability, and Breaches
10	Leadership Case Studies
11	Leadership Skills and Competencies
12	Management and Organizational Information Systems
13	Management Consulting Skills and Practice
14	Managerial Accounting and Financial Control
15	Marketing Strategies and Management
16	Research Analysis Methods and Techniques
17	Social and Environmental Strategies for Corporate Sustainability
18	Strategic Management Principles, Concepts and Analytical Methodologies

Table I-4 Course Topics for a MBA (Leadership and Sustainability KM Concentration)

APPENDIX J – PROPOSED PROGRAM-LEVEL LEARNING OUTCOMES

#	KM Competency	Learning Outcomes
1	Architecture	Operationalize a KM architecture and program for integrating computer and information systems applications
2	Knowledge Base Development	Acquire, capture, evaluate, and apply best practices and lessons learned to improve efficiencies, increase effectiveness, and sustain underlying business processes of an organization
		Analyze and structure an organization's:
		▪ tangible and intangible intellectual assets,
		▪ information and knowledge that flows between different systems,
		▪ records and documents in its corporate memory,
		▪ the expertise of its active and retiring employees, and
		▪ the technologies supporting its business processes
3	E-Business/ Electronic Data- Document Interchange	Acquire practical exposure to Management Information Systems (MIS), Information Technology (IT), and KM tools associated with business applications and electronic data interchange policy, practices, standards, and procedures
		Develop an understanding and insight into universal, international, national, and local standards, as well as conventions and specifications associated with KM applications and systems
4	Content Integration	Synthesize and model organizational knowledge in a manner that could facilitate individual, group, and organizational access
		Arrange, categorize, classify, and catalogue information by means of a superior knowledge of document management concepts
		Build and maintain data dictionaries, indices, metadata repositories, ontologies, and taxonomies to support business functions
5	Learning Environment Management	Inculcate innovative training methods conducive to continuous learning and sharing knowledge
6	Knowledge Sharing/Reuse	Demonstrate the value of knowledge sharing platforms and policies based upon incentives for collaboration and the practice of document management for storing and preserving information and knowledge

Table J-1-1 Proposed Learning Outcomes for a KM Program adapted from US Department of the Navy (2001a, p. KM-33–KM-57)

#	KM Competency	Learning Outcomes
7	Performance Metrics	Identify and apply KM metrics, tools, methodologies, and procedures to measure, evaluate, and enhance business performance
8	KM Concept/Strategy	Develop an understanding of foundational KM concepts, conceptual frameworks, methods, methodologies, models, and principles in order to insert them into the business strategy development and promote the benefits of KM
		Acquire an understanding and insight into the differences between data, information and knowledge—especially as it pertains to an organization's strategic concerns, different application domains, and information infrastructure
		Develop a broad-based industry awareness of KM in diverse environments: academic, business, executive, finance, government, health care, insurance, legal, manufacturing, pharmaceuticals, special libraries, telecommunications, transportation, utilities, etc.
9	Policy/Strategic Plan Development and Implementation	Apply information technology concepts, policies, practices, principles, procedures, standards, and operational requirements to develop or modify IT strategic plans and/or policy to take advantage of KM
10	KM Cultural Transformation	Lead and influence change using various tools and techniques to overcome barriers to KM and achieve practical and measurable business results
		Develop an appreciation of the social equity, sustainable growth, and environmental protection issues associated with KM
11	Information Resource Management	Acquire hands-on experience using external information sources, on-line bibliographic information systems, and other intelligence practices and techniques for discovering new information and confirming collected business and competitive intelligence
		Maintain awareness of current industry needs, key factors, and future trends in order to anticipate and respond to the changing and evolving requirements within an enterprise
12	Enterprise Resource Planning	Enable communication and knowledge flow between multiple enterprise applications and platforms
13	KM Ethical and Legal Issues	Diagnose intellectual property challenges associated with copyright, licensing, fair use, patents, and trademarks
		Acquire an understanding of the ethical, privacy, regulatory compliance, and legal issues relating to knowledge creation and use

Table J-1-2 Proposed Learning Outcomes for a KM Program (cont'd)

#	KM Competency	Learning Outcomes
14	Business Process Reengineering	Identify and apply analytical methods and procedures to review, assess, and map IM/IT processes and procedures to reengineer and enhance the organization
15	Facilitation and Arbitration	Identify approaches to work with disparate groups of people and build a team vision, goals, and objectives for constructing strong communities of practice
16	Systems Thinking	Formulate structured explanations for why things happen, to apply system archetypes to business situations, and to plan and evaluate actions to improve performance
		Adopt an analytical, clear, systems thinking approach to anticipate and strategically analyze problems by proposing feasible alternative solutions
17	Communities of Practice	Promote team collaboration and communications using appropriate, trusted technological solutions
		Encourage an atmosphere of accountability, responsibility, and authority in teams where differences, divergent opinions, and conflicts can be resolved and harmonized
18	KM Program/Project Management	Incorporate planning and management activities into KM programs/projects of various sizes, divergent business goals, and with differing anticipated benefits in a distributed team environment
19	Cognitive and Decision Science	Understand basis of human decision-making and thinking, and develop models and processes for knowledge collection, organization, sharing, and dissemination
		Apply frameworks for organizational behaviour, organizational design, and organizational psychology to KM business initiatives
		Identify the benefits of applying decision support systems, artificial intelligence, and expert systems for knowledge engineering initiatives
20	Business Acumen	Manage the organization's KM resource needs and execute strategies to maximize these resources.
21	Leading People	Acquire a grounding in the leadership skills, business competencies, and technical knowledge required to: successfully plan and manage complex, team-based knowledge projects; inspire and motivate others; and foster team spirit, trust, and pride

Table J-1-3 Proposed Learning Outcomes for a KM Program (cont'd)

#	KM Competency	Learning Outcomes
22	Building Coalition/ Communication	Acquire techniques to engage an organization's operating units with the topic of KM, represent an organization to external constituents, and build coalitions with external constituents
		Develop communication methods and techniques for active listening, documenting, packaging, marketing, liaising between various stakeholders and partners, and presenting KM program/project information
23	Knowledge Life Cycle Management	Analyze knowledge assets to determine when knowledge should be refreshed, archived, or destroyed.
24	Knowledge Mapping	Develop an approach to portray the specific knowledge and information policies of an organization in order to support the analysis and design of its business processes
25	Knowledge Transfer	Develop techniques for working with individuals and organizational leaders to broker organizational knowledge and repositories, and to synthesize knowledge for new uses
		Develop a sensitivity to the challenges associated with knowledge transfer across an organization that is flat (non-hierarchical), culturally diverse, international, and geographically dispersed

Table J-1-4 Proposed Learning Outcomes for a KM Program (cont'd)

APPENDIX K – PROPOSED JOB PROFILE FOR A KM PROGRAM
GRADUATE

Synthesized Profile Description of an Anticipated KM Graduate		
<i>Position Summary</i>		
	1	Provide leadership in KM to the organization and develop an integrated KM Conceptual Framework, KM Architecture, and KM Deployment Program.
	2	Develop and employ KM strategies and best practices.
	3	Advocate all KM-based initiatives by encouraging executives, managers, and staff to adopt appropriate KM methods, practices, techniques, and tools.
	4	Promote and manage realistic expectations associated with KM within your team and any client business units.
<i>Overarching Responsibility</i>		
		Champion all KM initiatives and successfully apply KM to strategic business opportunities, tactical business situations, and operational challenges.
<i>Essential Duties and Responsibilities</i>		
	1	Apply business competencies, skills, and technical knowledge required to planning and managing complex, team-based KM projects.
	2	Lead the strategic planning and design of integrated information and knowledge-based systems.
	3	Build collaboration, cooperation, trust, and clear communications through trusted IT solutions (including portals, content and document management, collaboration and community-of-practice tools, and distributed e-learning applications).
	4	Custodially manage the organization's intellectual property, assets, and capital (in terms of employee expertise, institutional memory, and information management practices supporting business processes).
	5	Build and stimulate passion in employees, managers, and executives by applying pragmatic knowledge transfer strategies and processes to business problems.
	6	Effectively influence an organization to strive for competitive advantage and continuous process improvement.
	C-1 ¹⁷	Construct social networks of employees, stakeholders, business partners, and clients to formally and informally share business knowledge.

Table K-1-1 Synthesized Profile Description of an Anticipated KM Graduate

¹⁷ Any of the profile elements with a C-1 or C-2 prefix refer to distinct roles or responsibilities indicated within each institution's program.

Synthesized Profile Description of an Anticipated KM Graduate		
<i>Additional Duties and Responsibilities</i>		
	1	Identify and construct KM metrics for measuring the impact of KM projects on business performance.
	2	Build knowledge capture approaches and engage techniques to ensure personnel succession planning, staff retirement, and termination of personnel where knowledgeable resources are critical to the business.
	3	Capture and apply best practices and lessons learned in order to stimulate efficiency, effectiveness, and sustainability.
	4	Promote innovation and creativity in the workplace as an exemplar of KM principles and practices.
	5	Comprehend and appreciate intellectual property challenges associated with copyright, licensing, fair use, patents, and trademarks
	6	Recognize and encourage business and competitive intelligence practices and techniques to sustain the business and create opportunities to stimulate new growth.
	C-1	Conduct meaningful action research projects to initiate change and overcome barriers to engaging KM within organizational business units.
	C-2	Build and maintain data dictionaries, indices, metadata, ontologies, and taxonomies to support business functions.
<i>Education, Knowledge, and Experience</i>		
	1	Bachelor's degree in a related field, (e.g. Business, Information Technology, Library and Information Science, or Management), or equivalent experience.
	2	Master's Degree (preferred).
	3	One to two decades of combined professional experience in mid- to senior level roles such as consultant, strategist, OB/OD/OT specialist, or analyst.
	4	Broad-based industry experience in diverse environments: banks and financial services, business, consulting, distribution, education, government, insurance, heavy manufacturing, software manufacturing, transportation, etc.
	5	Experience in applying frameworks for OB, OC, OD, and OP.
	6	Capability to differentiate data from information and knowledge with respect to organizational assets and an information infrastructure.
	7	Understanding and direct experience in the application of artificial intelligence, applications decision support systems, and expert systems for knowledge engineering initiatives.
	8	Insight in methods, techniques, and approaches for transferring knowledge across an organization that is flat or hierarchical, culturally diverse, international, and geographically dispersed.

Table K-1-2 Synthesized Profile Description of an Anticipated KM Graduate
(cont'd)

Synthesized Profile Description of an Anticipated KM Graduate		
<i>Education, Knowledge, and Experience</i>		
	C-1.1	Understanding and insight into universal, international, national, and local standards, as well as conventions and specifications associated with KM applications and systems
	C-1.2	Appreciation of the social equity, sustainable growth, and environmental protection issues associated with KM.
	C-1.3	Grasp of the ethical, privacy, and legal issues relating to knowledge creation and use.
	C-2.1	Broad-based industry experience in diverse environments: executive, legal, bibliographic, health care, special libraries, etc.
	C-2.2	Understanding into knowledge auditing and mapping, national and organizational information policies, and trans-border data flows.
	C-2.3	Hands-on experience using external information sources and online bibliographic information systems for discovering new information and confirming collected business and competitive intelligence
<i>Qualifications, Skills, and Abilities</i>		
	1	Well-developed communication, presentation, and active listening skills.
	2	Confidence and personality that builds trust, rapport, and effective networks, internally and externally.
	3	Collaborative, creative, entrepreneurial, innovative, and engaging.
	4	Independent and self-directed, but an active team leader.
	5	Knowledgeable in current industry needs, critical success factors, and forecast trends.
	6	Actively leads, positively influences, and manages change at all levels of the organization resulting in achievable, practical, and measurable business results.
	7	Facilitates and negotiates an atmosphere of accountability, responsibility, and authority respecting differences and divergent opinions, and conflict resolution.
	8	Analytical systems thinker who can anticipate and strategically approach problems by proposing feasible alternative solutions.
	9	Organized mind that employs techniques for categorization, classification, and cataloguing of information, including knowledge and experience in document and records management.
	10	Technically broad business expertise and previous hands-on experience deploying projects are technically sustainable.

Table K-1-3 Synthesized Profile Description of an Anticipated KM Graduate
(cont'd)

Synthesized Profile Description of an Anticipated KM Graduate	
<i>Organizational Relationships</i>	
	<i>Supervision Received</i>
	Professional member of the organization who receives direct supervision from a senior level executive.
	<i>Supervision Given</i>
	Facilitates and leads task forces, teams, and working groups within the organization.

Table K-1-4 Synthesized Profile Description of an Anticipated KM Graduate
(cont'd)

APPENDIX L – COMMON DECISION POINTS AND CRITICAL CHOICES
ASSOCIATED WITH DECISION-MAKING

#	Common Decision Points Associated with Decision-Making
1	Which conceptual frameworks, definitions, BOK elements, and curricula components comprise this field called KM?
2	Who are the authoritative academics and practitioners in KM?
3	Who should be on the Advisory Board and what qualifications would make their presence useful to the program development process?
4	What topics and which courses would ensure a comprehensive program offering?
5	What learning outcomes should be the cornerstone of the curriculum and which learning outcomes should be emphasized within each course offering?
6	Which sources (BOK candidate material) would best convey the learning outcomes?
7	What are the qualifications, competencies, and skills that instructors should possess to be able to teach these courses?
8	How should the program offerings be efficiently and effectively delivered: traditional face-to-face courses, distance education courses through private TV narrowcasting; online web-based courses, or blended courses incorporating all approaches?
9	Who is the target audience for this type of graduate degree program?
10	Which methods, software applications, tools, and techniques should be incorporated into the program offering?
11	Which courses should be omitted from the first offering and integrated later as additional electives?
12	What admission requirements are appropriate in evaluating applicants to the program?
13	What competencies and skills should a graduate be expected to possess when they have completed the program?
14	What kind of advertising, marketing, and sales campaign should be used to connect to the target audience?

Table L-1 Common Decision Points Encountered at Both Institutions Associated with Decision-Making

#	Critical Choices Associated with Decision-Making
1	Admission assessment criteria for applicants to the program
2	Advertising, marketing, and sales campaign elements
3	Competencies and skills of a potential graduate
4	Competencies, skills, and qualifications of potential Advisory Board and Curriculum Committee members
5	Competencies, skills, and qualifications of potential faculty members
6	Profile of the target audience for the degree
7	Candidate BOK material
8	Conceptual KM program framework elements
9	Conferences where additional knowledge about KM could be acquired
10	Course elements, delivery methods, tools, techniques, and instructional methods
11	Courses included/excluded in the initial offering
12	Schools or departments where a potentially shared, interdisciplinary degree option can be offered
13	Definition of KM
14	Learning outcomes for the curriculum and courses
15	Revenue-sharing ratio for departments that offer a shared degree
16	Vision and goals for the program

Table L-2 Critical Choices Associated with a Range of Alternatives for Decision-Making
for KM Programs