CURRICULUM DEVELOPMENT IN PROFESSIONAL EDUCATION: A DESIGN MODEL FOR INFORMATION STUDIES

by

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Abstract

This research study develops a process model for curriculum design in professional education that was identified from the critical analysis of a curriculum design project at a graduate faculty of library and information studies. The research study also provides a description of the curriculum design team's actions as a record for future use in other curriculum development projects by the faculty, as an account of a particular experience in information studies curriculum design, and as a guiding framework for the first phase of curriculum development in other schools with professional preparation programs.

In a case study approach where the researcher was also a participant and the facilitator of the design team, a curriculum design process model was developed from an analysis of the design team's meeting transcripts, meeting notes, components of the research program, working documents, position and concept papers, the final report of recommendations, and reflection by the design team members.

*The Information Studies Curriculum Design Model*, includes three phases in the design phase of curriculum development: *project definition* — stating the curriculum problem and outlining a structure for finding a solution; *solution design* — researching possible solutions, selecting a direction, and defining the components of a program; and *solution presentation* — identifying the audience and purpose and then presenting the findings.

Each stage of the design process model is characterized by specific *actions* (i.e.,
activities or decision points that move the process toward completion), inputs (i.e., information that informs the process), and outputs (i.e., information produced by the process).

The model also considers two factors that influence the entire curriculum design process — the aims and responsibilities of professional education and the need to construct meaning.

In addition to a design process model, this research study identifies seven challenges to curriculum development in library and information studies programs and suggests four new lessons learned by the curriculum development team. The researcher participant also offers a reflection on the role of a curriculum design team facilitator.
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# Table of Contents

Abstract ........................................................................................................ ii
Acknowledgments ........................................................................................ iv

Chapter 1: Problem to Be Investigated ......................................................... 1
    Purpose of the Study ................................................................................. 1
    Rationale for the Study ........................................................................... 3
    Research Question .................................................................................. 4
    Definition of Terms ................................................................................. 5

Chapter 2: Review of Related Literature ....................................................... 9
    Introduction ............................................................................................. 9
    Curriculum Development in Higher Education ........................................ 11
        Introduction ...................................................................................... 11
        A definition of curriculum ................................................................ 12
        The process of curriculum development - influencing frameworks .... 13
    Curriculum Development in Professional Education ............................. 18
        Introduction ...................................................................................... 18
        Characteristics of a profession ......................................................... 20
        Professional education ....................................................................... 21
    Educating Information Professionals ...................................................... 31
        Introduction ...................................................................................... 31
        Information professionals: a definition ............................................. 33
        Trends in educating information professionals .................................. 39
    Curriculum development in information studies education ................. 46
    Summary ................................................................................................ 55

Chapter 3: Methodology .............................................................................. 57
    Introduction ............................................................................................ 57
    Research Design ..................................................................................... 57
    Case Study Problem ............................................................................... 57
    Case Study Context ............................................................................... 59
List of Tables

Table 1  Library Science Professional Preparation
         Competence and Attitude Ratings ................................... 45
Table 2  PDAC Curriculum Design Model  .................................. 82
List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1</td>
<td>PDAC Research Project Conceptual Map</td>
<td>62</td>
</tr>
<tr>
<td>Figure 2</td>
<td>Case Study Conceptual Map</td>
<td>63</td>
</tr>
<tr>
<td>Figure 3</td>
<td>Process for Educational Program Development -</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Phase I - Project Selection and Design</td>
<td>67</td>
</tr>
<tr>
<td>Figure 4</td>
<td>Information Studies Curriculum Design Model</td>
<td>81</td>
</tr>
<tr>
<td>Figure 5</td>
<td>Phase 1 - Define the Curriculum Project</td>
<td>89</td>
</tr>
<tr>
<td>Figure 6</td>
<td>Phase 2 - Design the Solution</td>
<td>89</td>
</tr>
<tr>
<td>Figure 7</td>
<td>Phase 2 - Step 1 - Identify Possible Directions</td>
<td>91</td>
</tr>
<tr>
<td>Figure 8</td>
<td>Phase 2 - Step 2 - Select Direction</td>
<td>96</td>
</tr>
<tr>
<td>Figure 9</td>
<td>Phase 2 - Step 3 - Define Program</td>
<td>99</td>
</tr>
<tr>
<td>Figure 10</td>
<td>Phase 3 - Present the Solution</td>
<td>110</td>
</tr>
</tbody>
</table>
List of Appendices

Appendix A - The Program Development Advisory Committee Process
A-1  The Faculty's Change Time Line .................................................. 163
A-2  PDAC Goal and Objectives .............................................................. 165
A-3  PDAC Report of Recommendations ................................................ 167
A-4  PDAC Curriculum Development References ..................................... 181
A-5  PDAC Work Plan and Milestones ...................................................... 186
A-6  PDAC Research Tools ................................................................. 189
A-7  PDAC Data Analysis Coding Scheme ............................................... 198
A-8  PDAC Data Analysis Summaries ...................................................... 200
A-9  PDAC Report - References ............................................................ 238
A-10 PDAC Curriculum Design Components .......................................... 243
A-11 Program Distinctions ....................................................................... 254
A-12 PDAC Goal and General Recommendation ....................................... 258
A-13 PDAC Recommendations and Rationales .......................................... 259
A-14 PDAC Business Case Outline .......................................................... 268
A-15 Institute Outline (Proof-of-Concept) ................................................ 270
A-16 Analysis of Canadian LIS Programs ............................................... 274
A-17 PDAC Report Definitions ................................................................. 279
A-18 Information Continuum ................................................................... 282
A-19 PDAC Member Reflection Survey ................................................... 283
A-20 PDAC Process Member Evaluations ............................................... 284

Appendix B - Case Study
B-1  Process for Educational Program Development -
        Curriculum Development Model ................................................. 286
B-2  Data Analysis - Coding Scheme ..................................................... 287
B-3  Data Collection Items ................................................................. 289
B-4  List of Acronyms ........................................................................ 291
Chapter 1: Problem to Be Investigated

Purpose of the Study

Curriculum development priorities for a graduate faculty of information studies (the Faculty), were outlined in its academic plan, the central document that guides the strategic direction and development of the Faculty’s programs. In the academic plan, which was developed by the Faculty and approved by the university’s provost, one of the program development priorities was to explore the possibility of creating a new curriculum based on the field of telematics (i.e., information technologies combined with telecommunications and networking). The Program Directions Advisory Committee (PDAC) was formed and charged with recommending a curriculum design. Guided by the direction outlined in the academic plan, the PDAC began investigating the many facets of designing a curriculum that would provide the Faculty’s graduates with the competencies required to meet the current and future challenges of an information management professional.

Program review and implementation of new curricula were not unknown activities to the Faculty. As both the discipline and the profession of library science have continued to evolve during the past 25 years, the Faculty has experienced constant, substantive change. Its name, curriculum, course content, and faculty complement have been modified significantly in order to provide relevant educational opportunities for professionals in the emerging field of information science. For example, the Faculty led the North American library and information science (LIS) educational community with the introduction of a Masters of Information Studies (MIS) degree that replaced both the Masters of Library Science (MLS) and the Masters of Information Science (MIS) degrees. The curriculum content direction for the new MIS was developed to address the competencies acquired from the multiple subject areas comprised by the field of information science in order to provide streams of study for three professional specialties: archival studies, information systems, and library and information science.

While many North American LIS schools were still focused on curriculum review and revision that considered the effect of computer and telecommunication technology on library science professionals, the Faculty, directed by its current five-year academic plan, was preparing to take a further step in its program development by providing educational
opportunities for a broader group of mid-career information and information technology professionals.

However, the Faculty did not have a formal process for developing curriculum. Past curriculum development initiatives were completed by a variety of methods, most of which, admittedly, had no framework to guide the curriculum development decision-making process. There was no general curriculum development model to follow, no consistency in approach, and no record of experience on which to build expertise. In addition, the Faculty was not aware of any curriculum development models that had been either developed or adapted specifically for use in the field of library and information studies education. The Faculty's dean (the Dean) recognized the need to formalize an approach to curriculum development with tools that could be used to guide current and future curriculum development projects within the Faculty.

The purpose of this research study is to develop a model that could be used as a framework for curriculum design projects in graduate information studies programs -- a model that reflects a synthesis of the fundamental principles and concepts of curriculum development in higher education, the current environment of professional preparation programs, and the unique characteristics of information studies. Through a critical analysis of a curriculum design project in a graduate information studies program, a model is identified that reflects a curriculum team's process as it designed a solution to a particular curriculum problem. The analysis presented is based on: a discussion of the frameworks used to design the initial curriculum approach, a description of the actions taken and resources required throughout the PDAC's design process, a critical reflection of the challenges to and the lessons learned from the resulting approach, and a comprehensive presentation of the various phases of the design process model that emerged.

The curriculum development process has received little, if any, attention from researchers in the fields of graduate information studies or professional preparation. This research study seeks to further the research into the first phase of the curriculum development process, curriculum design. Although curriculum development models and case studies of approaches have been documented for higher education, the literature lacks a significant body of examples of process models and descriptions of approaches used to design curricula for professional preparation programs. With this case study, I seek to establish the fact that
general higher education curriculum design models must be modified to meet the specific needs of a curriculum problem, in this case, a curriculum problem in a graduate information studies program.

**Rationale for the Study**

In essence, this study is about the responsibilities of a professional school to prepare its graduates for competent professional practice, to provide leadership within a profession in order to further that profession's role in society, and to effectively manage limited resources. Without a formal approach to designing curriculum, a professional school may lack the ability to fulfill these responsibilities.

As Diamond (1989) notes, the resources (e.g., faculty, time, budget dollars) that are available to a university are limited. The curriculum development cycle for a degree-granting program is estimated to take between three and five years to complete, a process that represents a substantial investment of these limited resources. A systematic approach to curriculum development is necessary in order to effectively manage the resources available for designing curricula, especially in a field of study that is continuously evolving.

The Review of Related Literature, found in Chapter 2, establishes the fact that the discourse on curriculum development in graduate professional education is not extensive. Conrad and Pratt (1995) suggest that "...a need exists for comprehensive curriculum planning models that will aid in the process of integrating various theoretical considerations with an array of practical realities" (p. 345). At the same time, Mayhew and Ford (1974) suggest that, while no one model would meet the needs of all professional schools or even all schools within a given profession, "...there are common problems and common attempts at reform that suggest principles or ways of conceptualizing the curriculum which could be effective in most professional education" (p. 77).

As a framework for designing research studies in curriculum development for higher education, Stark and Lowther (1986), leading scholars in the field of higher and professional education, make six recommendations for further study. This research study seeks to satisfy four of their recommendations:

1. Useful recommendations will involve curricular change that is difficult to achieve.
2. A systematic, rational approach to curriculum planning is needed.
3. The organization of a discipline provides a realistic starting point for research and constitutes a general case from which other specific cases may be developed.
4. More balanced contributions from individuals with varied expertise can be useful. (Stark & Lowther, 1986, pp. 67-72)

The findings of this research study are intended to contribute not only to the discussion of the design phase of curriculum development in graduate information studies education, but to provide an additional curriculum design approach for the discourse on curriculum development in other professional education programs.

**Research Question**

Faculties of information studies continue to evaluate curriculum directions in order to provide relevant educational opportunities for a wide range of information professionals who are employed to meet society’s information and knowledge management demands. At the same time, these professional schools continue to further the development of the evolving field of information science through research efforts. Given the level of change within both the information professions and the field of information studies, designing a new curriculum poses challenges to existing frameworks that were designed for general curriculum development in higher education.

Every curriculum development challenge is influenced by issues specific to the environment in which the program will exist. At the Faculty, there were four key environmental issues that in turn contributed to the definition of the curriculum design problem analyzed in this research study.

1. *Evolution of the discipline* — the field of information studies continues to evolve due to the rapid advancement in computer and telecommunication technology and the expanding role of information in society.
2. *Convergence of disciplines* — the creation, management, and use of information (i.e., The Information Continuum) crosses among the traditional disciplines of library and information science, engineering and computer science, and business management. The professional competencies required to meet organizations’ information demands represent a convergence of these disciplines.
3. *Structure of previous training* — information professionals have traditionally been educated in discrete sectors (e.g., library science, archival studies, computer science). At mid-career, these professionals require further formal education in order to meet the current and future information demands of the workplace.

4. *Existing educational structure* — mid-career professionals, many of whom have senior and executive-level positions, have definite attitudes toward and requirements for further education that are not addressed by the Faculty's current program structure and teaching approach.

Using three established frameworks from the literature on curriculum development in higher education (i.e., the theoretical foundation of Dressel, the Phase I elements of Diamond’s curriculum development model, and the process application insights learned at Case Western Reserve’s Weatherhead School of Management) combined with the stated aims of professional education as a foundation for a curriculum design process, what model emerges as a framework for the design of a new curriculum in a professional education program seeking to provide professionals with the competencies required to meet the current and future demands of the workplace? And what experiences from the curriculum design team could be identified for consideration by other teams involved in a curriculum design process?

**Definition of Terms**

The literature in both education and information science is rife with disclaimers concerning the lack of agreement on definitions for many of the key concepts and terms within the two discourses. In an effort to standardize use and clarify meaning, I have provided definitions for terms specific to these two disciplines that are used in this research study. At the same time, I recognize that scholars and practitioners working within these fields of study may have varying opinions on the usefulness of a chosen definition. Wherever possible, terms requiring clarification have been defined within the paragraph where first used. However, the definitions of terms and concepts that have general significance to this research study are included in this section.

A training guide published by the International Federation for Information and Documentation (FID) suggests that given the terminological inconsistencies even within FID publications, all training sessions should begin with establishing working definitions. During
the PDAC's design project, working definitions were proposed, edited, and finalized. The definitions in this section are the result of that work. Some of the definitions were adopted from existing resources while others were modified or created by the curriculum development committee. The source is indicated in parentheses following the definition.

1. **Competencies** -- the knowledge base (subject matter and content areas), the skills (techniques and abilities), and attitudes (personal approach and motivation) used in combination to perform a task. (Stark & Lowther)

2. **Curriculum** -- an intentional design for learning negotiated by faculty in light of their specialized knowledge and in the context of social expectations and students' needs. (Toombs & Tierney)

3. **Curriculum Design** -- the initial phase of curriculum development where the process is defined in terms of a problem in design. The curriculum problem is identified and a solution formulated with emphasis on context, content, and form. (Adapted from Toombs & Tierney)

4. **Curriculum Development** -- the detailed process of formulating all aspects of a curriculum based on the design created to solve a defined curriculum problem. (Adapted from Toombs & Tierney)

5. **Information** -- data that have informed a human being. (FID)

6. **Information Continuum** -- a sequence that represents three levels of information activities: *creation* - plan, design, create, produce; *management* - acquire, organize, store, retrieve, disseminate, preserve; and *use* - analyze, synthesize, evaluate, package, apply, present. (The Faculty project)

7. **Information Management** -- the second level of activity in the Information Continuum. The actions required to acquire, organize, store, retrieve, disseminate, and preserve information for subsequent use. (The Faculty project)

8. **Information Professions** -- a system of occupations where professionals with specific competencies are responsible for the creation, management, and use of information. These professions include, but are not limited to: librarians, archivists, records managers, and information systems and technology engineers. (The Faculty project)

9. **Information Professional** -- professionals trained in the creation, management, and use of information particularly to: design, produce, acquire, organize, store, filter,
classify, retrieve, represent, and disseminate information with an emphasis on working with people in order to help them understand and manage their information requirements. (The Faculty publication). Generic groups organized by function that include: information system specialists and intermediaries, managers of information, information technologists and researchers, and educators and trainers of information workers. (Debons et al.)

10. **Information Science** -- the discipline that addresses the elements of information generation, storage, access, preservation, and use. (The Faculty publication)

11. **Information Taxonomy** -- the hierarchy of information: data -- raw information content, unprocessed by human beings; information -- data that have informed a human being; and knowledge -- information that has been analyzed, organized, and perhaps acted upon. (FID)

12. **Information Technology** -- the hardware, software, and communications tools that enable and support the creation, management, and use of information. (The Faculty project)

13. **Knowledge** -- information that has been analyzed, organized, and perhaps acted upon. Knowledge is cumulated by individuals, organizations, and societies. (FID)

14. **Knowledge Management** -- the management of organizational knowledge using the practices of information management and organizational learning in order to deliver value to the organization based on two foundations: the utilization and exploitation of the organization’s information and the application of people’s competencies, skills, talents, thoughts, ideas, intuitions, commitments, motivations, and imaginations. (Broadbent based on Harari)

15. **Professional** -- a member of an exclusive occupational group who applies knowledge and skills acquired in specialized training to particular cases. (Abbot)

16. **Professional education** -- a formal educational program directed toward helping students acquire special competencies for diagnosing specific needs and for determining, recommending, and taking appropriate action. Professional education also socializes students in the thought processes of the profession and to inculcate them with its customs, ethics, working relationships, and the behaviours expected from members of the profession. (Hoberman and Mailick)
17. Professional practice -- the judgement and wise action that a professional uses in complex, unique, and uncertain situations with conflicting values and ethical stances. (Schon)

18. Researcher participant -- a case study researcher who participates as part of the process or phenomena being studied as well as functions as a researcher collecting data. (Merriam and Gan)

**Summary**

Using my experience as a researcher participant working with a curriculum design initiative at a graduate faculty of information studies, I identify a curriculum design process model that reflects a synthesis of the following elements: the fundamental principles and concepts of curriculum design in higher education, the aims and responsibilities of professional education, and the unique environment and characteristics of a particular graduate professional program -- in this case, a graduate information studies program. Through a critical analysis of the approach that was used to design a curriculum at a graduate faculty of information studies, I also provide a record of a particular curriculum design process -- the steps taken, decisions made, resources used, and materials produced. The description of the design process also includes a discussion of the challenges encountered when designing a solution to the curriculum problem and an outline of the lessons that were learned by the design team.

Curriculum design teams in the field of information studies and in other graduate professional fields may find the process model and critical analysis of a particular approach outlined in this case study useful as a guide in developing a process framework to be used in their own curriculum design projects.

The next chapter establishes the context for this research study through a review of several bodies of literature. This review seeks to provide an understanding of the discourse of curriculum development in higher and professional education as well as to identify the unique characteristics of and challenges to curriculum development in the field of information studies.
Chapter 2: Review of Related Literature

Introduction

For the past three years, the annual conference of The Association for Library and Information Science Education (ALISE) has focused on the need to provide relevant curricula in order to educate professionals in an evolving discipline. In 1997, Reinventing the Information Profession centred on issues in the changing information environment and their effect on the type of professionals that library and information science (LIS) schools should be preparing for practice. The 1998 conference continued the theme of change with Transitions for Library and Information Science: Shaping the Future of our Discipline, Profession, Organizations, and Ourselves where discussions focused on various subject areas that constitute the LIS curriculum content. And, in 1999, the presentations at Beyond 2000: Designing Education for Library and Information Professionals were dominated by a new focus on change -- distance education and learning technologies.

The topics of the presentations in all three of these annual conferences parallel the basic elements of a curriculum development process with particular attention to: issues from the information environment influencing general curriculum directions, competencies required in an evolving profession as the basis of curriculum content, new learning technologies available as enhanced teaching methods, and the program or degree structure required to attract students. The juried papers from these annual conferences, in turn, form the basis of the literature specific to curriculum development in LIS education, with conference proceedings published in the Journal of Education for Library and Information Science (JELIS).

However, relatively little attention in either the ALISE conference presentations or the LIS education literature is focused on the actual process of curriculum development at these professional schools. In the past three years of JELIS’s quarterly publications, only one article, based on a 1997 annual conference presentation, included a case study and critical analysis of the application of a process model in an actual curriculum development project -- the revision of one school’s core curriculum.

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. Models would provide a structure with an outline of procedures and the time frame for designing and implementing a curriculum development project. Concept maps would show the relationships among the process components, influencing factors, and desired outcomes. Learning theory inventories would evaluate the use of the latest educational technologies. Professional profiles would list the competencies required and suggest alternative teaching approaches and program structures necessary to meet the learning style of mid-career, executive students. Examples of best practice would give advice on the dos and don'ts in the form of lessons learned -- advice on how to avoid some of the common pitfalls. And researchers would have studied the quality of the various curriculum development models, suggesting ways to improve the process and directions for further research.

Although a literature specific to curriculum development in information studies does not exist, resources on the 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. The contextual framework for this research study was constructed by reviewing the literature from these three fields and identifying elements of general theory and practice that could be applied to develop a process for a specific curriculum design problem in information studies.

As each element of the curriculum development process and the possible variations in approach are discussed, the tendency to present a laundry list or recipe in a cookbook approach is unavoidable. Discussing the elements of a process lends itself to outlining steps, listing procedural details, and identifying influencing factors. To create a framework for this research study, I began by reviewing the range of possible approaches to the process of curriculum development. The process models, overviews of theory, case studies, and reviews of literature subsets were characterized by their various elements and factors, often in point form. Once a range of curriculum development components was identified, elements were evaluated and selected to create the framework used to guide the Faculty's Program Direction Advisory Committee's (PDAC) curriculum design project.

The structure of this chapter parallels the research approach that I took in order to establish a process for the PDAC curriculum design project. The chapter begins with an overview of curriculum development in higher education and continues with a review of the
more specialized characteristics of curriculum development in professional education. To complete the development of a curriculum design process specific to information studies, I conclude the chapter with a discussion of the trends and issues influencing the education of information professionals, an analysis of the competencies required of information professionals, and an overview of the challenges facing the profession.

I also include a brief discussion of concepts that were pertinent to understanding the Faculty's specific curriculum problem: information that stakeholders, research participants, and the PDAC members might need in order to clarify terms or information that I as the researcher needed in order to effectively guide the curriculum development process that was unfolding.

The Review of Related Literature seeks to highlight the existing work of scholars and practitioners in the field of curriculum development in higher education. It illustrates how the framework for this research study was constructed from a synthesis of general curriculum development theory and practice, augmented with elements from the field of information science, in order to identify a curriculum design process for use at the Faculty and in other professional curriculum development situations.

**Curriculum Development in Higher Education**

**Introduction.** As outlined in the research question, the purpose of this research study is to provide a critical discussion of a curriculum design project that took place in a faculty of information studies: the process model that emerged, the influencing factors that affected the process, and the challenges that were identified. Critics might suggest that curriculum development in higher education is virtually nonexistent, that a discussion of curriculum development will make an academic turn and run. However, my experience working with the PDAC members has shown that, while an academic's area of expertise is not the theory and practice of curriculum development, there is a strong commitment to planning and implementing quality curricula for the students.

The members of the PDAC had little or no formal training in the field of education. While all of the professors on the team had experience in developing courses and evaluating programs, no one had consciously followed a specific curriculum development process. As
the only PDAC team member with a background in curriculum theory, I presented a basic overview of what was meant by the term *curriculum* and explained the various components of the design process that the team would be following.

In this section, a definition of curriculum is established and the frameworks used to create a design process for the PDAC project are discussed.

**A definition of curriculum.** Perhaps the one point that can be agreed upon by scholars and practitioners writing in the field of curriculum studies is that there is no single definition for the term *curriculum*. Egan (1978) suggests that the field has “no clear, logical boundaries” (p. 65) and Tomkins (1984) states that curriculum is “a slippery concept, a weasel word” (p. 1). Miller and Seller (1990) write that the various definitions cover a spectrum that ranges from the simplistic (i.e., a course of study) to the comprehensive (i.e., everything that occurs under the auspices of the school) (p. 3). Eisner and Vallance (1974) define curriculum as “what can and should be taught to whom, when and how” (p. 2), which supports Egan’s (1978) notion that curriculum development is about choices. Curriculum development must be concerned not only with what should be included, but with what should not be included in the design. This approach to curriculum as decision-making is reflected in the Conrad and Pratt (1995) model of curricular decision-making, where the various design components are linked with evaluation and consensus building.

A brief etymology of the term curriculum summarized by Egan (1978) begins with its Latin origin transferred directly into English with a primary meaning of “a running, a race, a course” and a secondary meaning of “a racecourse, a career.” The word evolved to encompass both the course or the container as well as the content or what was in the container. Within the last two centuries, the notion of methodology -- the *how* of curriculum -- was included in the definition thus resulting in a gradual shift in focus from the *what* of content to the *who* of curriculum, the learner.

In an analysis of curriculum terms found in a comprehensive review of the literature, Stark and Lowther (1986) suggest that a set of standard definitions should be established. Their definition of curriculum provides a meaning for the term, but also functions as a basic list of components to be considered in a curriculum development process. This definition
reflects extensive analysis of the various definitions of curriculum used in public school and higher education.

Curriculum -- An academic plan incorporated in a course or a program or both and including:
1. A selection of knowledge, skills, and attitudes to be learned.
2. A selection of subject matter in which to embed educational activities directed at acquiring the knowledge, skills, and attitudes.
3. A design for the educational activities, including sequencing of materials.
4. A consideration of the previous backgrounds and skills of the learners.
5. A selection of materials, sources, tools, and settings to be used in the learning.
7. A system for considering and revising items 1 through 5 in light of the result of 6. (p. 73)

For the purpose of this research study, a definition of curriculum was adapted from Toombs and Tierney (1995) as “...an intentional design for learning negotiated by faculty in light of their specialized knowledge and in the context of social expectations and students’ needs” (p. 334). This definition encompasses many of the essential elements of this research study’s curriculum design project. Specifically, the definition represents the structural elements and influencing factors of the PDAC’s design process including: the use of a design approach, the negotiated choices of a development team comprising faculty and information professionals, the competencies required by information professionals practicing in a society that is moving toward a knowledge-based economy, and the specialized learning needs and requirements of mid-career professionals.

The process of curriculum development - influencing frameworks. Since the Faculty had not used a formal curriculum design model in previous development projects and the literature on LIS education did not contain a plethora of choices, I searched the literature for models used in higher education in order to identify a framework for the PDAC project. Specifically, I looked for core components from the field of curriculum study: curriculum theory, process models, and applications. Three frameworks representing these core components were selected for their various strengths. A synthesis of elements from these frameworks formed the starting point and subsequent reference points for the curriculum
design process used by the PDAC. This section provides an overview of the selected works: theoretical framework -- Dressel (1971); process model -- Diamond (1989); and practice -- Boyatzis, Cowen, Kolb, and Associates (1995).

1. Theoretical Framework

Dressel (1971) expresses concern regarding the lack of an organized approach to curriculum design. He uses a construction analogy to illustrate a predominant theme in the literature, the need for curriculum improvement:

In the university (and the college too) the curriculum may be likened to sundry and assorted bricks, blocks, and stones. An uncoordinated professoriate and confused students pile these bricks, blocks, and stones in assorted patterns to construct the walls of an edifice which no one envisions clearly. No unified structure ever becomes apparent because between lack of mortar (although there are mortar boards) and lack of coordination (although there are deans) what is reared one year falls or is torn down the next. (p. iii)

In the discussion of curriculum issues, Dressel (1971) poses six questions that he suggests should help clarify curriculum direction. When analyzed, these questions closely parallel the elements of Stark and Lowther’s definition of curriculum noted above:

1. What students shall we educate?
2. To what ends shall they be educated?
3. What shall constitute the materials and means of instruction?
4. How much diversity in program and goals shall be encouraged and permitted?
5. How can the quality of higher education be evaluated and improved?
6. How is higher education to be financed? (p. 16)

A theoretical foundation for curriculum development based on the above considerations and consisting of three basic components is outlined by Dressel. First he suggests that one must begin with an understanding of where the faculty could be placed in four continuums that frame the fundamental educational concepts of the institution (e.g., flexibility and autonomy vs. rigidity and conformity). Second, he outlines five essential elements (i.e., liberal and vocational education, breadth and depth, continuity and sequence, conception of teaching and learning, and continuing planning and evaluation) that underlie the curriculum development direction. And third, he considers the facilitating agents that give character to the curriculum and need to be considered in order to implement the curriculum (e.g., the logistics of the course or program such as scheduling, records, orientation) (pp. 22-29).
The PDAC did not discuss at great length a theoretical approach to the process or a philosophy of the proposed curriculum. However, a philosophy began to take form once plans for testing the curriculum solution were made. As Toombs and Tierney (1995) note, “many a curriculum committee has foundered because at the first meeting -- and every one thereafter -- someone insisted that the philosophy be fully articulated before any action is undertaken” (p. 332). Instead, they suggest that the philosophy of the curriculum can only be known once the working components are in place and the program has been implemented.

2. Process Model

Diamond (1989), like Dressel, is a veteran of the study of higher education. His work in curriculum design spans several decades and his model for curriculum design is the product of years of application, evaluation, and revision. Diamond provides one of the most comprehensive primers on curriculum development in higher education, outlining characteristics, conditions, facilitating agents, and a curriculum development model.

Faculty ownership, support from the administration, clear priorities with appropriate resources, inclusion of an evaluation mechanism, support team availability, and a systematic approach are the six conditions that facilitate successful curriculum development no matter what model or structure for the actual design process and subsequent implementation is used (pp. 3-4).

Diamond also outlines six elements that should be contained in any approach to curriculum development, noting that the process of designing, implementing, and evaluating a curriculum is a complex resource-intensive exercise.

1. A sensitivity to the academic setting of the project
2. An awareness of the capabilities, interests, and priorities of the students the program is designed to serve
3. A knowledge and appreciation of the discipline
4. An understanding of the resources and options available to the faculty involved
5. An understanding of those instructional goals that are required of all students, regardless of their major and long-term personal goals.

(p. 5)

Diamond's curriculum development model, *Process for Educational Program Development*, has two phases beginning with project selection and design, followed by production, implementation, and evaluation (see Appendix B-1). He differentiates his model
from other models as a process that promotes thinking in terms of an ideal situation, uses diagrams to show structure and content, relies on the application of data, encourages a team approach, and remains politically sensitive (p. 7).

In Phase 1 of the model, the curriculum team begins by thinking in the ideal, considering: the domains of knowledge to be included; student knowledge, attitudes, and priorities; and societal needs and educational priorities. These elements are followed by the analysis of the project's specific factors, similar to Dressel's facilitating factors, such as the goals, time frame, resources, and students.

Once the project has been designed, the planners move into Phase 2 of the model, which is presented as a linear structure. Phase 2 includes determining objectives, selecting instructional formats, evaluating and selecting existing materials, producing and testing new and available materials, coordinating logistics for implementation, and finally the actual implementation and subsequent review of the program or course. While moving through the sequence, the planners are continuously designing the evaluation instruments and procedures to apply to the product of the development cycle.

Diamond strongly encourages the use of a model as a means of efficiently working with limited resources. He argues that using a model is advantageous in that it identifies the key factors in sequential order, serves as a procedural guide for project management, provides definition of roles and responsibilities of the planning team members, ensures that critical questions are asked and alternative solutions explored, and avoids duplication of effort (p. 4).

Lovell-Troy and Eickmann (1992) take the theoretical base of Diamond's approach and present a workbook that walks instructors through the process of course design. The main stages of the design process are identified as gathering, planning, implementing, teaching, and evaluating. The step-by-step explanation somewhat resembles a how to manual. However, the authors provide an adequate amount of theory to support the practice. The PDAC did not use this manual during the design phase; however, once the Faculty begins the second phase of its curriculum development project (i.e., the planning of specific courses), the manual will be useful, as it parallels the process that established the curriculum direction.
3. Practical Application

Boyatzis et al. (1995) provide both a narrative and a qualitative evaluation of a curriculum development project at Case Western Reserve’s Weatherhead School of Management (WSOM).

Evaluations of the existing program prompted the faculty and administration to rethink the school’s approach. A decision was made to shift the focus from teaching (i.e., subject or content focus) to student learning by designing a curriculum that was centred on student knowledge, not the organization of knowledge within the discipline (p. 10). The design principles used to achieve this focus on student learning were: evaluating educational structures and processes by promoting learning criteria, conducting outcome orientation to allow analysis of learning value added, becoming a learner-centered institution, carrying out continuous inquiry about the learning process, and developing an institutional learning strategy based on stake-holder conversation (p. 235). One should note that Kolb, as a member of the WSOM curriculum design team, would have had a significant influence on the design of this new direction, given his contributions to student-focused learning theory.

Following a similar approach found in other works, Boyatzis et al. (1995) first provide an overview of the design process. However, two other elements of their work are noteworthy in furthering the understanding of curriculum development in higher education. This work provides a supplementary framework to the theoretical underpinnings of Dressel and the practical application of a design model by Diamond.

Given that the WSOM curriculum project was a revision or an improvement on an existing curriculum, understanding the nature of change was crucial to the project’s success. The design team used a self-directed change model to fuel the project. The process began with articulating an image of where they were today (i.e., the real) followed by an image of where they would like to be (i.e., the ideal). An analysis of the discrepancy between the real and the ideal was then converted into a goal that became the action plan to design and implement change. Action and feedback on the progress were followed by an ongoing assessment of the real and ideal, a process that continued the cycle of evaluation and change (pp. 54-55).
Reflecting on their experience with the WSOM revision, the authors outline six basic principles in the form of suggestions or \textit{lessons learned} for consideration by other curriculum development teams:

1. \textit{Adopt an outside-in perspective.} After identifying the external stakeholders, learn the key issues to be addressed and use them as justification for the change, while acknowledging that choices in priorities will have to be made -- you can't be all things to all people.

2. \textit{Build on seeds of vision and strategy that lie within.} By aligning the expectations of external stakeholders with the competencies, interests, and aspirations of the faculty, a distinctive character is defined and the project is more likely to succeed.

3. \textit{Develop a collaborative attitude.} Establish a two-way process that gives equal opportunity for external and internal stakeholders to provide input. Collaboration builds a stronger program.

4. \textit{Challenge convention and tradition.} Design offers the opportunity to step outside of the status quo. By challenging tradition, the effort reflects the characteristics of current management theorists' notion of the learning organization that in turn fosters innovation.

5. \textit{Focus on substance rather than form.} Focusing on form often stifles creativity, innovation, and change thus resulting in simple maintenance of the status quo.

6. \textit{Provide multifaceted leadership.} The four forms of leadership (idea, inspirational, process, and political) -- all necessary for planning significant change -- will most likely be found in a variety of team members. (pp. 17-28)

The curriculum development frameworks presented by Dressel, Diamond, and Boyatzis et al. were the works chosen as influencing frameworks for the PDAC's design process. The combined elements of curriculum theory, process model, and practical application found within these three approaches provided a starting point from which the PDAC began its work. As well, Diamond's curriculum development model served as the foundation of the proposed design process model that emerged from the PDAC's process (see Chapter 4: Findings).

\textbf{Curriculum Development in Professional Education}

\textbf{Introduction.} The body of literature concerning professional education is extensive with the majority of work completed since the 1940s. Two broad categories within this literature were identified: works that address the general characteristics of professional
education and works specific to education in individual professions (e.g., law, medicine, education). In organizing this literature review, three themes were established: general professional competencies -- the basis of curriculum content and learner outcomes; curriculum development processes -- the steps and procedures followed; and issues and challenges impacting professional education -- the factors influencing the curriculum design structure and direction. However, before reviewing the components of professional education, the terms profession and professional are discussed in order to highlight the unique characteristics of this field of higher education that prepares professionals.

The Faculty maintains strong links to the information professions it serves and actively participates both nationally and internationally in leadership roles within the professional organizations related to the field of information science. Within the Faculty, there is a strong sense of professionalism, a commitment to creating a curriculum that provides a quality educational experience, a track record of producing graduates who assume leadership roles in the information professions, and a wealth of research that has expanded the boundaries of information science. In addition, the PDAC members from outside the Faculty were as strongly committed to professionalism and a desire to challenge the status quo by exploring new directions for the curriculum.

The PDAC had an awareness of the responsibilities of professional education that grew and became more focused as the curriculum design developed. The PDAC did not debate whether or not the information profession should qualify as a true profession. There was no question that information professionals, and librarians as a subset of that group of professionals, would be considered anything but a profession. Rather, the PDAC members' strong commitment to professionalism became a key element that influenced the design process.

In this section, the notion of a profession and a professional are explored with the intent of providing background for planning the research approaches that would be used by the PDAC, especially the research activities that would include participants who may not be familiar with the role of an information professional or the responsibilities of a professional faculty.
**Characteristics of a profession.** Although the definitions of profession and professional are not as numerous as the definitions of curriculum, a parallel can be drawn -- the words have a range of meanings, the characteristics vary by author, and no definitive list designates which occupations are bonafide professions. Freidson states that "...there is no single truly explanatory trait or characteristic ... that can join together all occupations called professions beyond the actual fact of coming to be called professions" (as cited in McGuire, 1993, p. 4).

Curry and Wergin (1993) use the phrase *true professional*, adding a qualifier that suggests a continuum of professionals. Schein (1972) notes that only the ancient professions of medicine, law, and divinity best qualify as professions and introduces Moore's notion that a *degree of professionalization* exists through a prioritization of criteria. Within this scale, the highest criterion is the achievement of autonomy, that is knowing what is best in a particular situation due to extensive training, subjecting one's decisions only to the review of colleagues, and establishing standards of entry and jurisdiction through peer-group association (Curry & Wergin, 1993, pp. 9-10).

Griffith and King (1986) tie the definition of a profession to the knowledge base of a discipline, both the recorded knowledge and the "...knowledge found in the collective minds of its professionals. A profession then is the demonstration of this knowledge." They continue by describing the three categories of professionals: "...practitioners who use and apply the knowledge, educators who impart the knowledge to professionals, and researchers and scholars, who through their studies, add to the collective knowledge of the disciplines and, consequently, the performance of the professionals" (pp. 167-168).

In a comprehensive work on the system of professions, Abbot (1988) begins with an overview of the literature on professions. He notes that, although professions have medieval and sometimes more ancient origins, the formal study of professions only began in the 20th century. Carr-Saunders and Wilson’s *The Professions*, published in 1934, was the first work to examine these occupational groups as "important but peculiar social creatures" (as cited in Abbot, 1988, p. 3).

Abbot's synthesis of the definitions of a profession begins with "...certainly all agreed that a profession was an occupational group with some special skill. Usually this was an abstract skill, one that required extensive training. It was not applied in a purely routine
fashion, but required revised application case by case. In addition, professions were more or less exclusive” (p. 7).

Although the literature reflects a debate on whether or not the information professions should be categorized as a profession, (e.g., there is no certifying and regulatory body licensing the individual for practice), that discussion is not addressed in this research study. No official designation of professional status for any school, faculty, or program exists within the Faculty’s home university. However, the Faculty is assumed to have professional status in that its tuition is designated as professional program fees.

Discussions of what constitutes a profession outline three components that form the basis of professional education: a knowledge base, a skill to be applied in varying situations, and a responsibility to serve society. These components are translated into the aims and responsibilities of professional education.

**Professional education.** Unlike the discussion of what constitutes a profession, the literature contains little disagreement regarding both a definition and set of objectives for professional education. Hoberman and Mailick (1994) define professional education as a formal educational program that is “...directed toward helping students acquire special competencies for diagnosing specific needs and for determining, recommending, and taking appropriate action. Professional education is also expected to socialize students in the ‘thought processes’ of the profession and to inculcate them with its customs, ethics, working relationships, and the behaviors expected from members of the profession” (pp. 3-4).

McGrath outlines the four objectives of professional education as: orientation to the profession, vocational flexibility, understanding of basic principles, and cultivation of professional attitudes and motivation (as cited in Dressel, 1971, p. 54). Hoberman and Mailick (1994) provide a similar list of objectives.

Professional education is directed toward helping students acquire special competencies for diagnosing specific needs and for determining, recommending, and taking appropriate action... [It is] also expected to socialize students in the ‘thought processes’ of the profession and to inculcate them with its customs, ethics, working relationships, and the behaviors expected from members of the profession. (pp.3-4)
Stark, Lowther, and Hagerty (1986) contribute three additional elements: learning academic concepts, learning necessary professional skills, and obtaining the ability to integrate the identified concepts and skills (p. 6). Lynton and Elman (1987) enrich the aims with a discussion of "enjoyment as well as the utilization of knowledge" based on the works of Alfred North Whitehead and Francis Bacon.

What better way of enriching the lives of individuals than to make them recognize their occupation as more than a way of making money, to make them interested in the history of their trade or profession, to make them view what they do in relation to society and as a contribution to society? (p. 84)

McGlathlin (1964) discusses aims in combination with their application: sufficient knowledge and skill to practice the profession, social understanding of sufficient breadth to place professional practice in the societal context and to provide professional leadership, personality characteristics for effective practice, zest for continued study which will steadily increase the professional's skill and knowledge, and competence in conducting or interpreting research that adds to human knowledge (as cited in Stark, Lowther, Hagerty, & Orczyk, 1986, p. 243).

These selected examples illustrate the agreement on the aims and responsibilities of professional education. As noted earlier, the importance of these objectives to the PDAC as it prepared design recommendations was significant. The continuous reflection on these aims and responsibilities guided the curriculum design process, thus highlighting the need to incorporate them into the process model for the development of professional curricula. However, while clear in purpose, the field of professional education is considered to be undervalued in the field of higher education.

Rhoades (1995) provides an analysis of the treatment of professional education within the larger body of literature on higher education by analyzing the contents of The Higher Education: Handbook of Theory and Research, six core higher education journals, and two student affairs journals. He argues that "professional education is a peripheral and devalued category in the general higher education literature, often characterized as overly narrow, specialized, and focused on skills and training versus general education" (p. 151). Of the literature that does exist, Rhoades notes a lack of focus on the socialization aspects of professions -- the interaction of the professionals, nonprofessionals, and society. His points are well illustrated by the volume in which his chapter appears. As the title indicates,
Revisioning Curriculum in Higher Education, the focus of the volume is curriculum reform. And, of the 44 titles listed on the table of contents, only Rhoades’ appears to deal directly with the topic of professional education.

Rhoades’ thesis is supported by an analysis of a bibliography of “key resources in higher education” by Menges and Mathis (1988). While I did not undertake an in-depth review of the articles, the table of contents and index were analyzed. In the seven sections with numerous subsections, there is no mention of the term professional. In the index under professional education, there is only a cross-reference to “Graduate and professional education” and “Medical education, Teacher training, and Training assistants.” Among the annotated entries indexed under “Graduate and professional education,” I was unable to find any substantive information on professional education.

Not all scholars would agree that there is limited attention in the literature to professional education. Rather, the limitation comes in analyzing the common processes across the individual approaches by profession. Anderson comments in an earlier review of the literature that various AAHE-ERIC Higher Education Research Reports produced in the 1970s lack a focus on methods: “In spite of a significant literature in the various fields of professional education, the process of becoming educated in the professions has received limited attention...” (as cited in Stark, Lowther, & Hagerty, 1986, p. 2).

While Rhoades may be correct that professional education is poorly represented within the literature on higher education, there are, nonetheless, significant works that contributed to establishing a context for this research study. Sources discussed many of the key components of curriculum development: content -- the competencies required by professionals (i.e., knowledge base, skills, and attitudes); program structure -- the curriculum development process; and issues -- factors influencing development. In addition, the literature discussed the future needs of professional curriculum development. Some of these issues were later identified as factors influencing the PDAC’s design process.

1. Competencies as Focus for Content

Developing competent professionals is viewed as the primary objective of professional programs (Fisher, Rubenson, & Schuetze, 1994; Lynton & Elman, 1987; Stark & Lowther, 1986). The competencies required by the profession guide the content of the curriculum forming the basis of instruction. As with other segments of the literature on professional
education, there are two broad categories of competencies -- general to the professions and specific to individual professions. A third literature on competency research, the process of identifying competencies (e.g., Flanagan, McClelland, Zemke), was beyond the scope of this research study and was not included in the literature review. The literature on competencies specific to information professionals is discussed in a later section of this chapter.

Fisher, Rubenson and Schuetze (1994) define professional competence as "...the ability to function effectively in complicated and ambiguous situations" (p. 20). Competence is considered a combination of skills (or abilities), knowledge base, and attitudes (Murphy, 1988). Numerous works present lists of general skills required by competent professionals. For example, Diamond (1989) lists eight: effective communication, interpersonal skills, interviewing skills, functional mathematics, basic managerial finance, problem solving and decision making, resource utilization, and computer utilization. Meister (1994) presents six skill groups identified by selected American corporations as core workplace competencies including: learning skills; basic skills (reading, writing, computation, cognitive reasoning); interpersonal skills, creative thinking, and problem-solving skills; leadership and visioning skills; and self-development and self-management skills (p. 9-8).

However, the most comprehensive work on competence in professional education was produced by a combination of researchers at the University of Michigan under the general direction of Stark. Their work is based on an extensive review of the professional education literature, a national survey of faculty in ten professional fields, and interviews with over 100 faculty members. Stark, Lowther, and Hagerty (1986) provide a list of six competencies synthesized from their research:

1. Conceptual competence -- understanding the theoretical/knowledge foundation of the profession.
2. Technical competence -- the ability to perform fundamental skills required of the professional.
3. Contextual competence -- understanding of the broad social, economic, and cultural setting in which the profession is practised.
4. Interpersonal communication competence -- the ability to communicate effectively with others through a variety of symbolic means.
5. Integrative competence -- the ability to meld conceptual, contextual, technical, and interpersonal competencies to make informed judgements about appropriate professional strategies to be employed in practice.
6. **Adaptive competence** -- the ability to anticipate and accommodate changes important to the profession (e.g., technological changes).

In addition to professional competencies, Stark, Lowther, and Hagerty (1986) discuss five professional attitudes that they describe as "...more elusive dimensions that are often considered to be part of 'becoming professional'" (p. 53). Professional attitudes are part of the informal process of socialization into the profession that are typically not articulated in program design or specified as particular curricular experiences. These professional attitudes include:

1. **Career marketability** -- the creation of competitive candidates for professional practice and the ability to reflect on the future course of their career.
2. **Professional identity** -- the degree to which the graduate integrates the profession’s norms, competencies, and values into a conception of role.
3. **Professional ethics** -- the need for practitioners to internalize the code of ethics agreed upon by the profession.
4. **Scholarly concern for improvement** -- the support of research to improve the profession’s knowledge base and ability to adapt practice to those new findings.
5. **Motivation of continued learning** -- the commitment to enhancing and updating knowledge and skills.

In a later work discussing the common goals of professional and liberal education, Stark and Lowther (1989) provide a list of goals that is an amalgamation of the above professional competencies and professional attitudes. In addition, they suggest that there are different expectations of recent graduates versus experienced professionals in terms of short-term and long-term outcomes and suggest possible differences due to gender, tradition, and work environment (p. 11).

Discussions of competence are not limited to simply presenting lists. Eraut (1992) suggests that identifying competencies is a challenge to professional education; that without specified competencies, the assessment practice becomes the identification of incompetence rather than competence (p. 113). And Murphy (1988), in a study that replicated the King Research study on competencies of information professionals, outlines concerns about the study of competence, highlighting an earlier study that suggested no relationship between professional success and medical school grades. The latter is a topic few deans of professional schools wish to contemplate (p. 2).
2. Professional Education Curriculum Design

General works on professional education such as Dressel (1971) and Hoberman and Mailick (1994) include comprehensive overviews of a range of learning theories. In addition, general works on curriculum development in higher education describe various aspects of the planning process. Portions of these general works (e.g., the description of needs assessment in Seymour, 1988) that are particularly appropriate to professional education development supplement the theoretical foundation of the curriculum design process. However, few works were identified in this review of the literature that specifically address the curriculum development process in professional education.

Although intended as a resource to curriculum development in professional education programs, Fisher and Levene (1989) fail to discuss such characteristics particular to professional education as issues of accreditation, responsibility to the professional body and society, and specialization vs. generalization of knowledge base. Instead, they present a general curriculum development handbook for higher education beginning with an overview of the context of learning, a discussion of the physical, psychological, cognitive, and internal and external sociological environments, and the societal expectations for graduates. Also included are chapters on the process of learning (e.g., readiness, motivation, reinforcement) and the process of teaching (e.g., preparation of students, selection and organization of content, creation of climate).

As a first step in the design process, Fisher and Levene suggest that the curricular purpose be carefully considered. In stating a purpose, the curriculum developers define "...the activities or kinds of activities that the graduating student is expected to perform, the circumstances under which these activities take place, the minimal degree of competence that is acceptable, and the criteria by which this minimal competence is assessed" (p. 70). They note that establishing instructional objectives in professional education is somewhat problematic given the specialized areas of knowledge and the difficulty of generalizing to a core list of competencies. "The natural tendency in these circumstances is for each specialist in the group to insist on ever higher standards of competence in his own particular specialty, and therefore by extension in all specialties, creating a spiral of increasingly demanding objectives" (p. 74). A summary of these approaches was provided to the PDAC to consider
as program components (see Appendix A-1). Five curricular patterns are presented in detail as models for curriculum design approaches:

1. **Separate Disciplines** -- the structuring of content according to the specific discipline.
2. **Broad-Fields** -- related concepts from various disciplines studied together.
3. **Problem-Oriented** -- facts and concepts learned to solve problems of the area.
4. **Competency Based** -- ability to generalize learned skills, abilities, attitudes, and values to situations within the profession.
5. **Student Oriented** -- a programme determined by the needs of each individual student. (pp. 81-91)

Several chapters and articles within larger works were located that discuss curriculum development in professional education. However, these works were typically limited to a discussion of a particular teaching or learning approach. These references may be useful to the team that would later develop the full curriculum based on the PDAC’s recommended design.

Ellis (1992) outlines an “action-focus curriculum for interpersonal professions” in a discussion of the interaction of personal, professional, and academic learning theories. A description of the difference between knowing “that” and knowing “how” is followed by four models that integrate the knowledge from academic disciplines with professional theorizing and action.

A goal of professional practice is wise action resulting from the use of specialized knowledge in complex situations. Harris (1993) provides a new epistemology of reflective practice for the professions based on the works of Schon. He references an example of a curriculum revision process for the University of Toronto’s masters degree in health administration, where a combination of deliberative curriculum inquiry approaches and the Tyler model (i.e., instructional objectives) were applied. “Justified decisions for action were documented in iterative written versions of curriculum plans, which included coherent arguments in support of intended plans, a review of alternatives considered, and rationales for choices made” (p. 44). To incorporate Schon’s reflection-in-action and reflection-about-action approaches, professional education would need to design curricular structure around problems of practice, provide opportunities for reflection, and assess students’ performance in practical situations (pp. 51-52).
3. Issues in Professional Education

Many of the issues in professional education parallel the issues found in general higher education. However, given the professional school's responsibility to create competent professionals for service to society, there are issues specific to professional programs that need to be considered when designing professional curricula. This brief review highlights issues identified over the last three decades. The issues expand both in number and complexity as the writings move to the 1990s.

Dressel (1971) characterizes the issues facing professional education as four-fold: departmental organization that segments the total education of the student, vocational and specialized focus that limits the broader experience, education for women, and faculty selection and training (pp. 126-127). In addition, Dressel discusses the impact of technology as both an issue and an opportunity. While the challenges of technological change are related to preparing students for a profession in transition, Dressel notes that technological advancements are also a motivation for continued learning.

Argyris and Schon (1974) expand the list of issues with a discussion of more socially oriented challenges including the power of the practitioner over the client and the inequities inherent in the ability to pay for services. The authors also look at the practical issues of program delivery. They suggest that the ineffectiveness of professional schools to produce competent practitioners is due to the differences between academic and practical realities and the challenges of reform to reflect a new professional paradigm based on self-actualization.

Stager and Meltz (1984) reporting to the Commission on the Future Development of the Universities of Ontario provide a narrower focus on the issues that reflects their mandate to review the supply of graduates to the professions. Two issues are identified: a process for allocating resources to professional programs is needed, and a level of enrolment corresponding to the labour market requirements should be established. The authors note that currently universities set enrolment levels. However, when there are manpower concerns (i.e., both shortages and surpluses), governments may want to intervene. In the end, it is the government's responsibility to provide the citizenry with adequate, highly qualified professional resources (p. 6). The supply of skilled professionals continues to be of concern to governments. Both the federal and Ontario provincial governments have announced significant funding programs to increase enrolment in strategic areas and create training
partnerships between educational organizations and industry (e.g., Ontario Strategic Skills Investment, Access to Opportunities Program).

The use of information technology by professionals is discussed by Marshall (1993), a professor of information studies with a specialty in health information. She points out the danger of thinking of technology as "computers alone" and suggests that any discussion of technology should include "...the key elements of the effective use of computers, which include the content of the information system, the context in which it is used, and the way in which the information is communicated" (p. 57). Marshall also notes that information technologies are appealing to professionals because the applications are designed for knowledge workers. Through the use of information technologies, the professional can "...expand the mind's ability to gather, store, retrieve, analyze, and use an ever changing and increasing knowledge base" (p. 71). However, due to the cost of implementing and maintaining information technologies, the benefits may not be easily achieved.

Stark, Lowther, and Hagerty (1986) identify three major issues confronting professional programs: the diversification of clients, the growing conceptual knowledge base, and the challenges of using technology. A basic challenge for educators revising programs is incorporating the additional content that should be covered (e.g., understanding the diverse needs of the client, communication skills, uses of technology) within the time frame established for obtaining the program credential (p. 71).

Hoberman and Mailick (1994) summarize the many issues facing professional education in ten categories. Once again, these categories parallel the various components of curriculum design and provide input on design possibilities:

1. **Objectives** -- the debate between research and teaching objectives of the school and its faculty.
2. **Content** -- the importance of including interpersonal relationships and establishing holistic practice along with the established knowledge base of the profession.
3. **Learning approaches** -- the need to base teaching on experiential learning.
4. **Faculty** -- the pros and cons of full-time faculty versus part-time practitioners.
5. **Student** -- students tend to lack an experience base which means that learning must also provide experience.
6. **Environment** -- oversupply of some professionals coupled with imbalance of service in poor and rural populations.
7. **Administration** -- controlling costs.
8. **Organization and structure** -- little relationship established between undergraduate and graduate programs as well as research and practice oriented programs.
9. **Accreditation** -- control held by school associations as opposed to professional associations.
10. **Technology** -- volume of information and information access are key issues. However, the larger issue is the use of technology for advancing the quality of professional education approaches.

While many issues facing professional education have been identified, the degree of specialization in order to produce competent professionals is one of the greatest challenges (Abbot, 1988; Dressel, 1971; Hoberman & Mailick, 1994). Increased research that results in expanding theoretical concepts and knowledge bases coupled with rapid changes in technology and growing numbers of practitioners within a given profession fuel the debate over specialization versus generalization in curriculum content. This issue is particularly pertinent to the field of information professional education that is discussed later in this chapter.

4. Future Directions for Professional Education

As with the issues facing professional education, discussions of future directions and suggestions for reform can be considered as influencing factors for designing new curricula. These discussions represent the study of professional education over a 25-year period.

In the late 1960s the Kellogg Foundation founded a project in partnership with the Ontario Institute for Studies in Education (OISE) to facilitate constructive change in curricula and in the teaching and learning process in professional faculties. In addition, the project posed the question “Can the professions learn from each other?” in seeking interprofessional and interdisciplinary communication among professional faculties (McLeish, 1973, p. 14). The *Report of the Professional Education Project* identified various needs and opportunities to achieve these change-oriented objectives:

1. **Consulting resources** -- establish various forms of consulting services “to which professional faculties could turn for expert and consistently-offered advice on renewal in curricula and teaching/learning strategies.”
2. **Support resources** -- continue the Project newsletter and resource centre.
3. *Further action research* -- establish research projects on improving the role of part-time teacher/practitioners in instruction and faculty participation, re-licensing developments in Canada, training and field delivery, and understanding change processes.

4. *Provision of study and training seminars* -- provide continuing education for consultants to professional faculties. (pp. 33-36)

While many issues continue to exist in professional education, Curry and Wergin (1993) set three priorities for change in their volume entitled *Educating Professionals*:

1. *Accountability* -- a proactive stance is needed in regard to public accountability for professional preparation.
2. *Curricula improvements* -- integrate technical and practical knowledge.
3. *Educational approach* -- adapt a more reflective educational practice with emphasis on problem-solving experiences. (pp. 317-321)

As noted earlier, the majority of the research in the field of professional education has taken place in the last 50 years and is primarily focused on education in the various professional specialities (e.g., the education of doctors, teachers, lawyers). However, the data analysis and reflection on practice regarding competencies, design processes, issues, and future challenges from the study of professional education in general serve as a foundation for discussing the components of curriculum development as applied in the specialized field of professional preparation in information science. An understanding of these components provided valuable background in analyzing the PDAC’s process in order to establish a curriculum design process model.

**Educating Information Professionals**

**Introduction.** The literature that seeks to establish librarianship as a profession and presents the various career opportunities for librarians (e.g., Carroll, 1970; Heim & Myers, 1992; Myson, 1968; Oakes, 1970; Paradis, 1963; Mount, 1993; Sellen, 1997; Shaffer, 1968; Wallace, 1959) illustrates how determined librarians have been to justify their occupation as a profession. Lists of professional criteria as applied to librarians' tasks, outlines of specialized knowledge in library science, chronicles of Babylonian clay tablet keepers, and recognition of Melville Dewey’s establishment of the first professional library school at Columbia
University in 1887 are but a few of the positions presented in support of the quest for society's acceptance of librarian as a profession.

The information professional is facing the same challenge of professional recognition, but without the long history of clay tablets and papyrus manuscripts from which to establish tradition, and more importantly, without a clear definition or understanding of the role of an information professional.

As Abbot (1988) notes, there is no undue confusion in meaning during a discussion of health professionals because the term health is familiar to most people. On the other hand, information is a somewhat nebulous term. Its meaning changes depending on the context of its use and on the background of the people discussing it.

Like health, the terms librarian, library, library materials, and library science are familiar to many people. There is a discourse that frames the people, places, objects, and services associated with libraries. The traditions and stereotypes readily define the role of the library professional thereby, creating an understanding, a familiarity that facilitates discussion. However, this research study is not concerned with librarians, libraries, or library services as framed in the more familiar, traditional sense. Rather, the study is concerned with a broader concept of information creation, management, and use in terms other than the physical, tangible realm of library. The concepts of information and knowledge are at the centre of this research study. More specifically, this study addresses the preparation of a broad range of professionals who are managing information and providing services not contemplated by the traditional role of librarian. For the purposes of this research study, this group is identified as information professionals.

In this section, the literature review turns to a discussion of information professionals -- the employment trends and competencies required that shape the definition of the profession and the curriculum directions of professional schools responding to the challenge of preparing these professionals for practice. However, a definition of an information professional must begin with a definition of information. The literature discussing the nature of information is extensive, and a comprehensive review is beyond the scope of this research study. Three approaches to defining information are presented to illustrate the trend toward defining information as a multilayered term, often as a part of a taxonomy.
Buckland (1991) from the School of Library and Information Studies at the University of California Berkeley states that an exploration of information “runs into immediate difficulties.” He proposes three definitions based on the *Oxford English Dictionary*, while acknowledging that these definitions may not be satisfactory. Buckland suggests that if at least the principal uses of information can be “…identified, sorted, and characterized, then some progress might be made” (p. 351). He discusses information in terms of: *information-as-process* -- the act of informing someone, what they know is changed; *information-as-knowledge* -- the result of the informing process, knowledge is created; and *information-as-thing* -- information as an object such as data or documents, items meant to inform (p. 351).

Barlow (1994), a lyricist for the Grateful Dead, co-founder of the Electronic Frontier Foundation, and an activist for the protection of intellectual property also acknowledges that information is “…by its nature, intangible and hard to define” (p. 13) He suggests three different properties: *information as an activity* -- information is a verb, not a noun, the pitch not the baseball; *information is a life form* -- it wants to be free, wants to change, and is perishable; and *information is a relationship* -- meaning has value and is unique to each case.

Taylor (1986) from The School of Information Studies at Syracuse University, in his framework for discussing the field of information, outlines a schema of information as a value-add process. *Data*, the raw information content unprocessed by humans, become *information* after initial organizing processes such as grouping, formatting, or displaying are applied. Information becomes *informing knowledge* and *productive knowledge* after analyzing processes (e.g., evaluating, comparing) and judgmental processes (e.g., presenting options, advantages, and disadvantages) are applied. Finally, knowledge becomes *action* once decision processes (e.g., compromising, choosing) are completed (p. 257).

These three definitions highlight the complexity of information and the challenge to succinctly define what exactly an information professional does without launching into the syllabus from a foundations course in information studies.

**Information professionals: a definition.** Busch, a scientist writing about the difficulty of keeping up to date with the work of his colleagues in 1945, is frequently cited as the first person to write about the information explosion. Malchup, Bell, and Porat are credited with identifying the origin and subsequent development of an information society
where the use of information was central to work (Griffiths & King, 1986, p. 152; Marshall, 1993, p. 56). The information profession appears to be a by-product of the move from the industrial to the postindustrial or information age.

Since the early 1960s, the concept of information professional has been debated by educators in the field of library science. With the information age looming, educators gathered at an invitational conference in 1964 to discuss the "...nebulous no-man's land between librarianship, documentation, information retrieval and information sciences... This amorphous shape was seen as the domain of 'science information personnel'" (Goldwyn & Rees, 1965, p. 1). Central to this discussion were the advancement in computer and telecommunications technology and the ways these tools could be incorporated into the management of typical library functions (e.g., collection access, circulation, administration).

As with many of the other concepts discussed in this review, there are not only varying definitions but also varying forms for the profession's title in the current literature (e.g., information professional, library and information professional, and library-information professional, as well as librarian). In addition, the professional preparation programs parallel the confusion using Library/Information School, library science, library and information science, information studies, and information science studies. Sometimes the terms are synonymous, sometimes they imply components of each other, and sometimes they have totally different meanings.

In a discussion of the system of professionals, Abbot (1988) includes an entire chapter on information professionals. He acknowledges a certain ambiguity regarding a definition of the term primarily due to the use of the word information. In formulating his definition, Abbot considered "groups that provide others with information" and those who "help clients overburdened with material from which they [sic] cannot retrieve usable information" (p. 216). He establishes two groups within the information profession. *Qualitative information professionals* are defined as those who create information that gives clients a basis for action -- a prescriptive process. Within this category, librarians are the predominate group, but also included are academics, advertisers, journalists, and "others." *Quantitative information professionals* comprise cost accountants and management engineers, statisticians, operations researchers, system analysts, and "others" whose concentration is on providing action
recommendations derived from either the creation or analysis and application of information (p. 216).

Missing from this classification is reference to those professions involved with information systems, the computer and telecommunication technology used to manage information. Abbot groups these professionals into information science -- a science that was accelerated by the introduction of the computer and belongs to the consortium of scientific professionals (e.g., mathematics, physics, electrical engineering). However, he also suggests that this group may be the catalyst for convergence of the information professions. “The computer’s importance in areas controlled by so many different professions implied, of course, the potential of unifying them” (p. 242). He illustrates this convergence with the trend of library schools to include information science in their names and the trend of business schools to include information systems in their programs. He also notes that professional organizations are no longer homogeneous highlighting that the American Society for Information Science includes professionals with library, social science, science and engineering, as well as arts and humanities degrees (p. 245). Although Abbot predicts a convergence in a complex area of work, he also predicts that the professions in the information area “...will end up as small, elite professions with intellectual jurisdictions over large areas” (p. 246).

In order to propose a framework for the study of information professions, researchers from the University of Pittsburgh’s School of Library and Information Science along with King Research Inc. undertook a national survey to collect baseline data on types and numbers of information professionals employed in the United States. Debons, King, Mansfield, and Shirey (1981) estimated that there were 1.64 million information professionals with approximately 1,500 unique occupational titles.

Three classification schemes were suggested for discussing the wide range of job types and functions found in the data. First, generic groups were identified: information system specialists and intermediaries, managers of information, information technologists and researchers, and educators and trainers (p. 5). Second, the jobs were classified by primary functions: managing information operations, programs, services, or databases; preparing data and information for use by others; analyzing data and information on behalf of others; searching for data and information on behalf of others; remaining (i.e., other or miscellaneous)
operational information functions; information systems analysis; information systems design; information research and development; and education and training of information workers (p. 5-7). Third, nine general groups, called workfields, were identified on the basis of the primary way in which information was handled and for what purpose: computer, education and training, financial, information services, library, management support, research, statistical, and technical publications, and other or unspecified (p. 167). Once analyzed, only nine percent of the total number of information professionals are categorized as working in information services and ten percent in libraries.

Further work on competencies and implications for professional programs by King Research (Griffiths & King, 1986) was widely discussed at conferences and in the literature throughout the 1980s. Replications and parallel studies were undertaken to validate the findings (Murphy, 1988).

Two elements from the works of Debons et al. (1981) and Griffith and King (1986) that influenced the PDAC's curriculum design project were: the need to understand competencies required for the professionals and the need to design programs that focus on segments or niches of the information professional due to the wide range of information professions identified.

Another trend in the literature is the use of the terms librarian and information professional as a type of collective noun that encompasses both meanings. Heim and Myers (1992), in a discussion of library and information science careers, focus on fairly traditional roles (e.g., public services, technical services, administration) in various types of libraries (e.g., public, academic, corporate). Their use of the term information professional in fact means a librarian. In a subsection on Opportunities for Information Professionals in Other Settings, the role of the information professional is expanded somewhat to include archivists, publishers, multimedia librarians, information brokers, information consultants, professional association workers, and library and information science faculty members. The authors address Information Science as a separate field and introduce the four categories of positions within the field as identified by the American Society of Information Science: operation of information systems, management of information systems, design of information systems, and research and teaching. They rather simplistically note the difference between library science and information science. "Some information science positions are quite different from those
filled by librarians. The training of both types of professional, however, is generally through a school of library and information science. The two fields are closely allied" (p. 33).

In Cronin’s (1982) study of the objectives of professional education for librarians and information scientists, the term library-information professional is used only once, with a footnote explaining that “henceforth ‘library’ will be used to mean ‘library-information’” (p. 2). Unfortunately this decision to collapse terms causes confusion especially when other works are cited. What does library mean in the works that Cronin referenced? Would the authors of these referenced work accept the collective definition?

Variations of terms also exist within the literature due to a layer of international publications. In a handbook on training for information resources management from the International Federation of Information and Documentation (FID), definitions are presented with a clear understanding that not all "lexicographers and others" will agree.

Defining terms for information management is a difficult task. Some of the difficulty arises from lack of knowledge about information and its use by human beings. Other difficulties arise from traditional divisions within information management -- libraries and information systems for example -- that have developed their own terminology. In fact, terminological inconsistencies exist within this manual, given the different sources from which is [sic] was drawn. (FID, 1994, p. 1)

The authors suggest that, at the beginning of any training session, working definitions should be discussed.

In the Standards for Accreditation of Master’s Programs in Library & Information Studies, the American Library Association (1992) defines the term library and information studies as a phrase that:

...is understood to be concerned with recordable information and knowledge and the services and technologies to facilitate their management and use. Library and information studies encompasses information and knowledge creation, communication, identification, selection, acquisition, organization and description, storage and retrieval, preservation, analysis, interpretation, evaluation, synthesis, dissemination, and management. (p. 2)

A school of library and information studies is defined as a “...unit organized and maintained by an institution of higher education for the purpose of graduate education in library and information studies” (p. 2). While it may not be surprising that library continues to play an important role in the definition of terms from the American Library Association
(ALA), it should be noted that the ALA is recognized by the Council on Postsecondary Accreditation and the U.S. Secretary of Education as the accrediting agency for library and information studies programs. ALA accreditation is also sought by Canadian library and information science schools. Representatives from the Canadian Library Association are members of the ALA Committee on Accreditation.

The current ALA Standards passed by ALA Council in 1992 are a revision of the previous standards accepted in 1972. Recent discussion of the Standards notes that not all professional programs have libraries and librarianship as the central component of the curriculum. A request has been made to the ALA Council on Accreditation to consider the growing concern that the Standards may not be as applicable “...to schools solely concerned with information science...” (Lynch, 1998, p. 44).

Maack (1997) proposes a new model for defining information professions that is client-centered. Introducing the concept of empowering professions (i.e., professions that share expertise with the goal of enabling clients to use knowledge in order to take control of their own lives or learning), the model is based on “...beginning with what the individual knows, identifying the nature of the information gap, and assisting that person in locating, evaluating, and effectively using any kind of print or electronic material that will meet her information needs” (p. 295). Four processes of empowerment form the basis of the model: increasing self-efficacy, reducing self-blame, developing group consciousness, and assuming responsibility for change.

Not all discussions of professions and professional education either include library or information science in their schemes (i.e., not considered a profession, rather a vocation) or limit the focus to library science alone. For example, among the twelve fields of professional preparation analyzed in Stark, Lowther, and Hagerty’s (1986) work on professional competencies and attitudes, the researchers refer to professional programs in library science alone. No mention is made of a larger group of information professionals, information science, or multiple content streams within a library science program (i.e., aspects of information science other than libraries).

What seems a rather straightforward transition from a profession defined by the facility in which information is stored (i.e., a librarian in the library) to a profession defined by the objects with which it works irrespective of location (i.e., information professional
managing information) is in fact a mine field. A convergence of terms is made more difficult by the fact that there is a convergence of disciplines -- computer science, engineering, information science, and library science (Apostle & Raymond, 1986; Apostle & Raymond, 1997; FID, 1994; Taylor, 1986). In addition, each discipline brings its own terminology and processes. The convergence, in fact, means establishing a new discipline complete with its own discourse.

What then is a workable definition of information professional for this study? Because the Faculty had already evolved from a faculty of library science to a faculty of information studies, considerable work had been completed on establishing definitions. For the purposes of this research study, the following definitions from the Faculty’s publications were used:

*Information professions* -- a system of occupations where professionals with specific competencies are responsible for the creation, management, and use of information. These professions include, but are not limited to: librarians, archivists, records managers, and information systems and technology engineers.

*Information professional* -- professionals trained in the creation, management, and use of information particularly to: design, produce, acquire, organize, store, filter, classify, retrieve, represent, and disseminate information with an emphasis on working with people in order to help them understand and manage their information requirements.

While the Faculty had established definitions, a review of the literature discussing possible definitions underlines a number of curricular components for discussion by the PDAC, particularly the range of prospective students. The review of definitions also underlines one of the challenges that the PDAC worked with throughout the curriculum design process, the need to establish the meaning of words and concepts. In terms of knowledge management, this process is defined as creating or constructing meaning.

**Trends in educating information professionals.** A significant body of literature discusses the trends in education for library and information professionals. Gates (1990) summarizes the trends as: *implementing the broader view* -- expanded programs indicated by the use of “information” in the names of 51 of 61 schools; *extending programs* -- move from
one-year to two-year degrees; incorporating research methods -- research as a component of programs; employing distance education -- variety of methods to provide off-campus courses; providing continuing education -- emphasizes a method of keeping professionals up-to-date once graduated; discussing comparative librarianship -- interest in librarianship as practiced abroad; and providing financial assistance -- increase in method of funding students (pp. 101-102).

For the purpose of framing this research study, not all trends (e.g., one-year vs. two-year programs, part-time vs. full-time study, generalization vs. specialization) were considered. In addition, the substantial literature addressing the debate of the merits of a traditional library focus versus the more encompassing information science focus of the curriculum was not included. Given that the Faculty had already stated the importance of information studies to its program in both renaming the Faculty and redesigning the curriculum, there was no need to develop a position. In this section, two trends to be considered as a basis for curriculum development in library and information studies are developed: employment opportunities and competency identification.

1. Employment Trends

Numerous surveys of information science program graduates indicate that, while the majority of the graduates are working in library settings, there is a wide range of “other” information-related jobs and an increasing number of nontraditional roles for information professionals within library settings (Brent & McLachlan, 1994; Cronin, Stiffler, & Day, 1993; Koenig, 1993; Tees, 1986). The majority of these studies were conducted by faculty members of various library and information schools to better understand the employment opportunities for graduates and to evaluate existing educational programs. In addition, collections of personal accounts of alternative careers -- some in the information profession, others outside -- characterize jobs and job functions outside of traditional library settings (Canadian Library Association, 1996; Mount, 1993; Sellen, 1997).

Cronin, Stiffler, and Day (1993) analyzed the content of job advertisements, surveyed library school graduates, and conducted interviews with information specialists. They characterize the market for information professionals as: the heartland -- the traditional library setting; the hinterland -- distributed information systems or libraries-without-walls; and the horizon -- the hardware and systems component of information management (p. 258).
While the authors conclude that it is difficult to quantify the emerging job market for information professionals, the data suggests a trend toward new opportunities in the "hinterland" and a trend toward nontraditional roles in the "heartland" (pp. 272-273). They note that their findings are not new quoting from Learned's 1924 discussion of public libraries, "Mere grubbers in books according to professional tradition or a prevalent conception of public librarian will not do" (as cited in Cronin et al., 1993, p. 274).

Faculty from the University of Western Ontario's Graduate School of Library and Information Science (subsequently merged with journalism and communications to form the Faculty of Communications and Open Learning, then restructured as the Faculty of Information and Media Studies) surveyed senior managers in Canada to estimate the employment trend for information management professionals as a subsection of information professionals. Employers were also asked to judge the importance of 19 skills related to information management as identified by the researchers. Although employers did not project a significant increase in information managers within their organizations (e.g., 11 positions in the next 3 to 5 years in organizations averaging 3359 employees), the researchers conclude that extrapolated to all organizations, there is a considerable potential for placement of graduates (Bent & McLachlan, 1994, p. 459).

Koenig (1993), quoting an earlier study, comments on the continued trend of increased employment in special libraries and the corporate environment as well as in the information industry. He notes that the information industry's discovery of library and information science graduates has impacted the directions of LIS schools' focus. "This education has stretched, not without some complaint from the traditionalists, to accommodate this new role of serving as a special purpose graduate school of business to the information industry" (p. 281). In addition, the direction has demanded a more international focus because "...the information industry is inherently international, which in turn derives from the fact that information, the commodity, is inherently international" (p. 282).

Brittain (1989) summarizes the employment trend literature from the United Kingdom, highlighting the works of multiple studies (e.g., Dosa, 1985; Moore 1986,1987; Scrivens, 1985). Emerging professional roles include: information resource management, information counselling, resource utilization, social networking, and public information dissemination (p.
163-164). He notes that although "...the emerging market is thinly spread across a wide range of occupations and professions... the market size is great" (p. 195).

Understanding the employment trends for information professionals provides curriculum developers with a direction for establishing content. The types of professionals hired also identifies the types of competencies that are required, the basis of the professional programs' content.

2. Competency Trends

Griffith and King (1986) in a study based on the job classifications identified in the earlier work of Debons et al. (1981) reviewed the literature on library and information professionals looking for references to outlines of competencies. They concluded that little work had been done in identifying competencies and that in the material reviewed, a discussion of competencies required for the future was nonexistent. The researchers suggest that this lack of discussion on competencies becomes an issue for both the profession and its educators.

What assurance do employers have that graduates can perform tasks adequately? Also, what assurance do professional schools have that they are imparting the needed skills in their curricula, if no one attempts to measure whether or not, and to what degree, graduates have attained the competencies necessary to function effectively in work environments? (p. 298)

In their study of competencies, Griffith and King (1986), working with an advisory group of information professionals, agreed to group competencies into three categories: knowledge -- having information about, knowing, understanding, being acquainted with, being aware of, having experience of, or being familiar with something, someone, or how to do something; skills -- the ability to use one's knowledge effectively; and attitudes -- a mental or emotional approach to something or someone (pp. 31-33).

In addition to the three categories, the study identified competencies according to three dimensions: work settings -- including libraries, clearing houses, database producers, publishers, archives, museums, and units where information professionals operate as part of a larger team; functions performed -- such as reference, management, acquisition in libraries; and level of professional activity -- entry level (1 to 3 years), midlevel (4 to 9 years), and senior level (10 years or more) (p. 35).
After interviews with managers to gather data on functions performed, opinions on competencies, employment practices, preparation of employees, continuing education practices, career paths, criteria for evaluation, and trends in information management, a second round of interviews with information professionals was held in two phases. Data on functions performed, educational background, work experiences, professional activity, entry preparation, coping with change, and career development opportunities were gathered in phase 1. Data on critical incidents in exemplary situations were gathered in phase 2.

Sets of competencies were identified, described, and validated for 22 functions in 12 work settings. Competencies were classified by: generic across functions and work settings, generic across functions within work settings, and generic across function. Within the work settings section, competencies were further classified by library type (e.g., academic, public, special) and nonlibrary settings (e.g., database producer, clearinghouse). Competencies in specific functions in specific work settings were also further defined, such as acquisitions, management, and indexing.

The generic competencies across all functions and work settings are similar to the professional competencies and personal attitudes identified by Stark, Lowther, and Hagerty (1986). The authors note that "this set of competencies should apply equally well to other types of professionals. They represent the basics for professionals" (Griffiths & King, 1986, p. 195). As one might expect, the competencies become more specific as the work setting and function are further defined.

Murphy (1988) designed a study with a sample of 12 library managers or supervisors in seven corporate libraries to replicate the earlier work of Griffiths and King. The study outlines the key competencies of several categories: activities, knowledge, skills, and affects. Managerial skills, knowledge of the organization, and various forms of communications were highlighted as essential competencies along with initiative, independence, resourcefulness, and adaptability. Murphy also provides an evaluation of the Griffiths and King methodology. She notes that the list of competencies for special librarians is the most comprehensive list available but requires refinement (p. 24).

The work of Stark, Lowther, and Hagerty (1986) noted earlier, does not detail the competencies specific to the various professions studied. Rather, their work seeks to establish a core of general competencies across professions. A second stage of their study analyzed the
literature from 15 professions to see how often the various competencies and attitudes were discussed. In addition, the researchers interviewed faculty regarding the importance of the six competencies and five attitudes. (For a review of the categories of competencies and attitudes, see Chapter 2: Review of Related Literature.) The authors present evidence, through a series of tables, how each competence and attitude is discussed in the professional literature and by the faculty educating professionals in specific fields.

I created Table 1 to show a synthesis of the various competencies and attitudes in which library science education “rated.” Notes on the meaning of the results follow the table. From this analysis, library science professional preparation rates *high* consistently only in two, although corresponding, areas: professional competence -- adaptive competence (i.e., the ability to anticipate and accommodate changes important to the profession) and professional attitude -- scholarly concern for improvement (i.e., the support of research to improve the profession’s knowledge base and ability to adapt practice to those new findings.) The fact that library science programs rated high in these two categories reflects the evolving nature of the profession and the LIS schools’ responsibility to evolve their programs to meet professional needs.
Table 1
Library Science Professional Preparation - Competence and Attitude Ratings

<table>
<thead>
<tr>
<th>Competence/Attitude</th>
<th>Journal Articles (1)</th>
<th>Importance of Professional Outcome (2)</th>
<th>Educ. Activities (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conceptual Competence</td>
<td>Low</td>
<td>Low - 35%</td>
<td></td>
</tr>
<tr>
<td>Technical Competence</td>
<td>High</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>Contextual Competence</td>
<td>Low</td>
<td>Low - 76%</td>
<td></td>
</tr>
<tr>
<td>Interpersonal Communication</td>
<td>Low</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>Integrative Competence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adaptive Competence</td>
<td>High</td>
<td>High - 57%</td>
<td>High - 58%</td>
</tr>
<tr>
<td>Career Marketability</td>
<td>High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional Identity</td>
<td>Low</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional Ethics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scholarly Concern for Improving Prof.</td>
<td>High</td>
<td>High - 34%</td>
<td>High - 72%</td>
</tr>
<tr>
<td>Motivation for Continued Learning</td>
<td></td>
<td></td>
<td>High - 64%</td>
</tr>
</tbody>
</table>

(1) A “high” proportion of articles indicates that over the five-year period examined, the percentage of outcome articles devoted to this competence was above the third quartile of percentages of all fields examined; a “low” proportion indicates the percentage of articles in the field fell below the first quartile.

(2) Percentage of faculty members in the survey who answered “7” on a seven-point scale when asked what emphasis would “ideally” be placed on the outcome in their professional preparation program.

(3) For most outcomes, this information includes the percentage of faculty members in the survey who reported that their program had formal or informal educational activities intended to foster the outcome. (Stark, Lowther, and Hagerty, 1986, p.20)

Note: Blanks in this table indicate that library science did not rate in any category.
The Special Libraries Association, the second largest library and information-related professional organization in North America, recently completed a competency document that outlines 11 professional competencies and 13 personal competencies for special librarians (i.e., librarians working in settings other than school, public, or academic libraries). Within the document, *professional competencies* are defined as competencies that "...relate to the special librarian's knowledge in the areas of information resources, information access, technology, management and research and the ability to use these areas of knowledge as a basis for providing library and information services" (p. 4/14). *Personal competencies* are defined as competencies that "...represent a set of skills, attitudes and values that enable librarians to work efficiently; be good communicators; focus on continuing learning throughout their careers; demonstrate the value-added nature of their contributions; and survive in the new world of work" (p. 4/14).

The committee charged with the task of creating the competency document acknowledged the importance of communication between the professional organization and the professional preparation schools. In a statement on audience, they note that earlier competency documents were primarily aimed at educators. However, with the current document, the committee recognizes the key importance of competency documents as a way to inform employers about the particular knowledge and skills of special librarians and as a statement of the value that special librarians add to an organization (p. 2/14).

The Alliance of Libraries, Archives and Records Management (ALARM), a Canadian forum for information professionals and their employers, was formed to strengthen the skills of the more than 200,000 workers in the information management sector. ALARM's goal is to provide a strategy for human resource development that will promote training and life-long learning to improve job qualifications. Although ALARM is not directly connected to professional preparation programs, their work in identifying competencies (see issue number 6 of the ALARM (1998) human resources development strategy) will add to the competency literature.

**Curriculum development in information studies education.** Although a number of library and information science schools closed in the last several years, Dalrymple (1997) suggests that this sector of professional education is in fact expanding. "From 1986 to 1996,
the number of master's degrees awarded annually in the U.S. and Canada rose from 3,596 to 5,273, an increase of 1,677 or 46% (p. 31). Faculty in the schools grew as well with full-time increasing by 7% to 601 and part-time increasing by 23% to 752 (p. 33). Given the growth in professional programs, the changes in employment trends, and the need for specific competencies, curriculum development activities currently underway in North American library and information science programs provide practical examples for other projects. A review of curriculum development projects is organized by the three basic elements of curriculum design: *the who* -- the needs of the learner; *the what* -- the choice of content; and *the how* -- the methodology.

1. The Learner

The focus of the literature on the learner continues to be on the entry-level program graduate. The majority of the discussions centre on educating for the changing role of librarian to information professional. Marcum (1997), president of the U.S. Commission on Preservation and Access and the Council on Library Resources, characterizes the librarian of the future. "Librarians of the future will be knowledge navigators. They will understand digital resources as well as printed books and other formats. Their services will not be restricted by physical location, either of the materials or of themselves" (p.35). DiMattia and Oder (1997) in discussing the opportunities for librarians as knowledge management professionals describe a range of skill sets required including vision, innovation, and "big picture mentality" along with skills in communications, marketing, and technology. They characterize the professional preparation required as "...MLS skills melded with an MBA mindset pointed toward success" (p. 35).

The dilemma of defining the roles of librarian and information professional directly affects the design of the curriculum. Hill (1993), in the introduction to an issue of *Library Trends* focused on the educational foundations for library and information management careers in corporate environments, described the challenges.

To label corporate library/information management as special librarianship is to belie the great turmoil and new paradigms that are emerging as information managers with different skills seek to solve the information management problems formerly secure within the realm of librarianship. It is not clear, at this point in time, what jurisdictions librarianship will continue to claim as its own. With changing professional jurisdiction and new market opportunities,
it is not certain what the nature of the new profession will be and what skills and knowledge should be taught in preparation for that career. (p. 226)

Huber (1995) discusses library and information studies education for the future practitioner again in terms of the changing nature of the profession due primarily to technological advances and uncertainty as to what direction the education should take.

...the exact nature of that curriculum remains in question. There are several factors, though, that provide insight as to possible directions education in this field may take as it is impacted by advancing technologies, and as a cross-discipline approach strengthens for the provision of information services. Ultimately, though, it is inevitable that the field of study offered by each school or college of library and information studies will evolve to mirror the emerging needs of future practitioners. (p. 120)

The Conant Report (1980) provides a comprehensive review of 15 U.S. graduate library schools examining the objectives, scope, and content of programs and evaluating the extent to which library educators fit their programs to the needs of the profession. “The development of professional competence, the mission of the graduate library schools, can be achieved only if their curricula correspond approximately to the knowledge and skills required of the professional librarian” (p. 19). With the evolving needs of the learner at the centre of curriculum development, content selection follows a similar evolution.

2. The Content

As noted throughout this section, a significant body of literature addresses the need to revise the curriculum content focus. The trend either to include information studies or information science along with library terminology in the professional school's name or to drop library terminology all together reflects the shift in content focus. However, as Olsgaard (1989) notes in his volume Principles and Applications of Information Science for Library Professionals, even librarians misinterpret the meaning of information science.

To most library practitioners, the term “information science” merely implies the application of computers to existing library-related operations. This characterization was partially inspired by some schools of library and information science that added “information science” to their names without significantly adding to their curriculum. As a result, a large portion of the library profession is without the terminology, concepts, and theory necessary to understand the developing discipline of information science, or its possible implications to the profession. (p. vii)
Many assessments of the content of library and information studies programs use the schools' catalogues of courses as a basis for review. Fosdick (1984) compares two surveys in 1976 and 1982 to assess the development of programs. He notes a fundamental shift in course content. In the earlier survey, technology was studied in programs as it applied to the automation of traditional library functions (e.g., circulation, cataloguing, reference). In the later study, the concepts of information science and the use of technology as a tool beyond traditional library functions (e.g., database management, communications/networking, systems analysis) constitute the new focus (p. 301).

Gardner (1987) blends the skills outlined by Taylor (1986) and the knowledge identified by Tague and Austin (1986) as the basis for a discussion of content revision that, as Conant (1980) thought, should be based on the types of jobs for which the students are prepared. He cites the following areas as required content directions: design of information systems, management and marketing of information systems, creation and marketing of data banks, and online searching (p. 36).

Defining the boundaries of information studies as a knowledge base for the curriculum parallels the challenges of defining information professions or information itself. One approach to content revision is a convergence of the fields of archival studies, librarianship, and records management (Casey, Carroll, & MacDonald, 1997; Pemberton & Nugent, 1995). A curriculum based on the common foundation and the areas of specialization of these three fields allows for the provision of core courses that address commonalities as well as specialized streams. This model was the direction that the Faculty followed in the substantial revision to curriculum that resulted in the introduction of the Masters in Information Studies degree.

Another trend is the move away from a library focus altogether. Van House and Sutton (1996) suggest a direction for curriculum development that "further decouples" library and information studies from libraries. Using ecological theory as a framework to manage the changing environment, the authors suggest that the profession's most powerful argument for jurisdiction is the use of its knowledge base to develop better tools and better solutions to address information problems. Through the development of new means of information storage, manipulation, retrieval, and dissemination, the professional LIS schools have a chance of survival given the interest in information management shown by powerful players.
such as faculties of computer science and business administration. Addressing the problems of the information environment, with an emphasis on adaptive strategies, is seen as a basis for curriculum development content directions. This trend was particularly pertinent to the PDAC. The content direction chosen for the new program addresses, in large part, the knowledge management needs of organizations in both the public and private sectors.

Grover (1985) questions the practice of using existing competencies as the basis for educating professionals for the future, referencing the findings of King Research, Inc. A conference at Emporia State University in 1984 provided a forum for practitioners and educators from the fields of information systems, information resource management, archives management, records management, and library and information science to discuss the content of professional education. Central to an information professional's role is the ability to identify and diagnose information needs. The core curriculum suggested by Grover is a combination of theory and practice that stresses the leadership role of the information professional. The proposed curriculum includes specific abilities to: articulate a philosophy of the library and information professions; recognize basic human behaviour patterns applied to the communication of information; comprehend the theory and general patterns of information transfer in society; articulate the major methods of organizing information for use in the design and implementation of information systems; manage an information system; employ appropriate management theory; analyze information needs of a client group; apply appropriate research methodologies and interpret research results in the management of an information system; evaluate and design an information system, employ appropriate methods and technologies; and design appropriate services for a particular environment based on the comprehension of the societal functions of libraries and information centers (e.g., educational, cultural, informational, research, recreational, and bibliographic functions) (pp. 38-42).

Based on Grover's (1985) nine abilities of an entry-level information professional, Tague and Austin (1986) suggest a curriculum for an information science program. The basic components are: foundations of information science, information systems, information environments, information technology, marketing of information products, and end-user training. The authors note that "a convergence of the areas of information retrieval, computer information, information management, bibliometrics/scientometrics, and library science seem
to be emerging, as a (though not the) new direction for schools of library and information science" (pp. 33-34).

In addition to the literature on general content directions, there are works on components of general content by specific topic or subject area and specific job segments. Wiegand (1997) brings reading research to the attention of library and information community, whose focus in the last 20 years has been keeping up with technology. He establishes a position for the importance of understanding the scholarship on reading as a core component of studying information behaviour and notes that value systems are identified by what is included in a curriculum as much as by what is excluded. Armstrong and Keenan (1985) edit a volume from an international conference on information technology in the library/information school curriculum held in London in 1983. Various components of information technology are presented to highlight the multiple approaches to incorporate information technology-related topics into the curriculum. Bearman (1993) outlines specific competencies needed by archivists as the basis for designing educational programs. The seven skills (i.e., communication, management, understanding of technologies, research, critical thinking, information resources, and responding to information needs) and the six attitudes (i.e., sensitivity to user needs, flexibility, curiosity, interest in continued learning, self-confidence, and a sense of humour) might easily be applied to any information professional, not just archivists. Willner (1993) highlights the need for understanding financial management. Given the cost of implementing new technologies, competence in financial management is crucial for information professionals, especially those functioning within the corporate environment.

However, there are two general trends in content direction revision. First there is a trend to continue to build on a library focus by adding a technology focus, which does not imply that LIS schools should merely continue to teach traditional library functions with the addition of technology. Rather, the generic skills attributed to librarianship would provide the basis for the evolving role of information professional. Second, there is a content shift to a broader base of information studies, again not to discard the importance of a library component, but to emphasize the various fields of study within information science of which librarianship has a part. Herring (1996) concludes a discussion on the emerging role of the information management professional by suggesting that “...this new profession represents
the convergence of skills and knowledge of a range of other professions, plus the addition of conventional senior management skills...” (p. 518).

3. The Methods

Perhaps the smallest concentration within the literature is on the educational processes of teaching and learning. However, several works begin by establishing a definition of curriculum and include references to specific educational models. The evolution of teaching styles is presented by Grotzinger (1986). Beginning with Williamson’s report in 1923 where concern over teaching style was expressed, “...concerted effort should be made to raise quality of instruction in library schools by increasing salaries and making teaching positions more attractive...” (as cited in Grotzinger, 1986, p. 461), Grotzinger chronicles the introduction of instructional technology in the 1960s, to the call from ALA in the 1970s to experiment with new teaching methods, learning devices, and different patterns of scheduling and sequence, and the inclusion of independent study, library-centered education, case study, and distance education approaches.

Morehead’s (1980) comprehensive study of library education is often referenced. His overview of modes of instruction (e.g., face-to-face, independent study, class presentation, projects, laboratory work) and focus on library-centered education (i.e., library as laboratory) explore what he characterizes as the “perennial issue in professional education generally and library education specifically: the problem of theory and practice in the instructional process” (p. 7). He also provides a history of criticism of educational practice and suggests that because decades of debate have failed to resolve the theory-practice issue, the profession is in the healthy position of being forced to return to the early theoreticians of library education. “For there have been no more lucid construction than those of Williamson and Reece” (p. 49).

The reader should note that the works of Melville Dewey (1887), Williamson (1923), and Reece (1936) all outline the need for an experiential component in the curriculum. Huber (1995) presents a concise overview of three program models that have been seen as successful in graduating students who can adapt and function in a rapidly changing environment. The models all incorporate problem-based learning, critical thinking, and life-long learning (p. 122). Sievert, Johnson, Hartman, and Patrick (1997) present their experience with delivering a course entitled Libraries, Medical Informatics and Health Care via teleconference with an additional Internet component. The experiment in distance education
methods raised a number of issues including: access, motivation, matching content to media, delivery, and evaluation. In addition, a number of problems were identified, primarily from the use of various technologies. However, from the experience, the authors provide several recommendations: assume change -- everything will change; distance education works best as a team effort -- seek more help than you think you'll need; and continue to research distance education -- seek better understanding of how delivery methods shape instruction and learning through dialogue with colleagues. In another study of the use of technology in instruction, Weingand (1997) lists several benefits: increase in student learning as multiple senses are engaged in the experience; the ability to reach learners without the restriction of time and distance; the ability to serve both traditional and new audiences; more student interest and attention; faculty development; and a rethinking of ways of teaching and learning (p. 327).

In a joint project between the University of Maryland's College of Library and Information Services and the Montgomery County Public Library, students used a community resource project to pilot a program based on experiential learning. The community expressed a need for a community information service. Faculty, library staff, and students worked together to design an information product and service. Students gained experience not only in aspects of database and systems design, but in user needs assessment and information seeking behaviour (Abels, Marchionini, & Wasserman, 1997).

An evaluation of experiential learning approaches at the University of Hawaii's School of Library and Information Studies is presented by Garrett (1997). Beginning with an overview of Dewey, Dale, and Bruner's theories on education and experience, Garret outlines the experiential learning approach as used in a basic cataloguing and classification course. Students evaluated the experience through an ungraded paper reflecting on their successes, problems, and concerns and by completing a structured evaluation that used a rating scale. In both assessments, student satisfaction with the experiential approach was high. Garrett concludes that "...when the experience is truly educative, the beneficiaries are the students who begin their professional career understanding the underlying principles and theories of their profession and possessing the confidence to perform their professional tasks with competence and skill" (p. 136).
4. Practical Examples

As was seen in the section on professional education, examples of practice illustrate various approaches to curriculum development that can be evaluated by other curriculum developers. In an article entitled Transforming the Curriculum; Transforming the Profession, Marcum (1997) outlines the curriculum development efforts in four U.S. schools of library and information science that were funded by grants from the Kellogg Foundation. The University of Michigan, Drexel University, The University of Illinois Urbana-Champaign, and Florida State University designed and implemented substantial curriculum development initiatives. Although similar in identifying a range of opportunities available to information professionals, these four LIS schools developed in somewhat different directions.

The University of Michigan's School of Information expanded its mission to include a variety of information systems, with libraries continuing as a core system. Doubling the faculty size to include programs on information systems management, human-computer interaction, and future systems architecture, the school drew expertise from faculty whose former appointments were in the fields of psychology, computer science, economics, business, and public policy. Drexel University's College of Information Science and Technology not only addressed content, but also followed the structure of curriculum development adopted by the University that is focused on student and consumer needs. In addition, curricula in the undergraduate, graduate, and continuing education programs were interconnected. The University of Illinois's Graduate School of Library and Information Science focused on revising teaching methods. A distance education model called LEEPS3 was developed to explore the possibilities of offering educational content outside of the physical space of the school. In addition, the school has implemented a problem-based learning approach and a research-team focus for analyzing and presenting information content. A new bachelor's degree in information studies was formed at Florida State University's School of Information Studies. The program was built in a collaborative effort across a number of faculties where courses were already being taught. The focus of this integrated approach was to establish a curriculum based on the needs of the information user.

A case study of a curriculum revision process at the School of Information and Library Studies (SILS), State University of New York at Buffalo, was located after the start of the PDAC's design process. SILS's review of their core curriculum was guided by two associate
professors using a fourteen-step, four-level model developed by Gagne et al. (1992). Zimmerman and Jorgensen (1998) provide a narrative of the first two levels of the process. They discuss the recommended changes to the core curriculum, a list of competencies identified as outcomes, and the resources used to support decisions. The focus for the revision centered on the lack of technology skills included in the curriculum. Concluding remarks by the two researchers outline the frustrations of working with a time-intensive systematic design model, the danger of becoming so involved in the process that communication is impeded, and the challenges of implementing systemic change. This case study serves as an important addition to the literature in that it provides an account of a particular project and evaluates an approach to using a process model as the framework for curriculum development.

Summary

In this Review of Related Literature, I have sought to identify the range of possibilities for establishing the components of a framework to guide a curriculum design process. Because a relatively small number of curriculum development projects in graduate schools of library and information studies have been reviewed in the research literature, I sought an understanding of the general principles and concepts combined with reports of application from the related educational literature in order to create a theoretical and procedural framework that would guide a curriculum design process for the creation of a new program to meet the changing needs of information professionals.

I reviewed examples of process models, development approaches, and procedural accounts from research in curriculum development in higher and professional education in order to isolate characteristics, elements, and factors -- the individual components of curriculum design required to create a conceptual map for the PDAC’s project. In addition, I examined issues and trends affecting the field of library and information studies and the professionals who practice in the field of study in order to understand the influencing factors and the environment in which the design project would take place.

In order to outline a planning process for the PDAC’s project, I chose three frameworks as building blocks: Diamond’s curriculum development model, Dressel’s theoretical design considerations, and Boyatzis et al.’s practical application of the WSOM curriculum redesign project. The synthesis of core elements from the works of these three
scholars provided me with an approach, a model, and practical advice on how to proceed with the design problem at the Faculty.

The various components, characteristics, and factors that illustrate the principles and concepts of curriculum development discussed in this chapter were critical to the success of the PDAC’s curriculum design work. The results of these influences are discussed in the analysis of the PDAC’s design process in Chapter 4: Findings.
Chapter 3: Methodology

Introduction

This research study was developed using the postpositivist paradigm of naturalistic inquiry. Many of the characteristics of naturalistic inquiry as outlined by Lincoln and Guba (1985) are evidenced in this study's research design including: the research is carried out in the natural setting of the entity or phenomenon being studied, the primary data-gathering instrument is the researcher and other research participants, qualitative versus quantitative methods are used, the sampling is purposeful as opposed to random, the data analysis is inductive, the substantive theory is grounded in or emerges from the data analyzed, and a case study reporting mode is selected.

Research Design

Case study is a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence. (Robson, 1993, p. 52)

The research design for this study is based on a case study strategy. To structure the case study design, I consulted the works of Robson (1993) and Merriam (1988). Each of these researcher/practitioners brings a unique perspective to this naturalistic form of empirical inquiry, while basing their approaches on the frequently cited works of leaders in the field of qualitative research design -- Yin, Lincoln and Guba, and Miles and Huberman among others. Robson focuses on the issues confronting research that is carried out within a real world situation where often the researcher is also a practitioner and the research study is related to that person’s employment. Merriam presents the various elements of designing and implementing a case study that is problem-centred and case-specific with the additional focus of designing qualitative studies within the field of education. The combination of principles and concepts from these two works guided my design of this research study.

Case Study Problem

A fundamental feature of problems is that they are expected to have solutions. (Able, Margetson & Sauer, 1985, p. 83)
As in most real-world studies, the problem to be investigated in this case study stemmed from an actual situation. The Faculty had a mandate to explore the development of a new curriculum. In the Faculty's academic plan, the 5-year strategic plan that guides the Faculty's programmatic priorities, a point under Program Development outlined a direction and several goals for the investigation of a new program.

**New Program in Telematics:**

The area of telematics (combining information technologies with telecommunications and networking) is rapidly expanding and of high interest within industry. Through initial environmental scanning, we have determined considerable support within the public and private sectors for a graduate program in telematics. An Advisory Committee is currently being established to guide our deliberations in shaping a new self-supporting, privatized program for public and private sector industry. It is expected that this privatized program (modelled after the Executive MBA program) could be self-supporting within three years of program development. The program would be separate from the MISd degree IS stream, but would provide insight into the demand and feasibility for creating a separate Telematics Stream within the MISd degree program.

(The Faculty's Academic Plan, 1995-2000, p. 22)

While this program development statement included specific directions on content, the Dean explained to the PDAC members that the term *telematics* had been used as a placeholder when the academic plan was written 4 years earlier. In fact, the curriculum content focus for a new program did not need to be based on telematics. Given the rapidly changing nature of both the information profession and the discipline of information science, the investigation should, as part of its process, validate whether telematics was a desired content direction or whether another direction should be considered.

Even though the Faculty had undergone significant change in the past 25 years, including significant revision of curricula (see Appendix A-1), there was no established framework for guiding curriculum development initiatives. Most of the curriculum projects, including a recent, substantial revision of the core masters degree program, were accomplished by committees with no substantive attention to the elements of a formal curriculum development process. No curriculum development models had been used.

Given the magnitude of the proposed curriculum development initiative, the Dean believed that it was necessary to approach the problem in a more systematic way through the
use of a formal curriculum development model. The Dean’s involvement with the Association of Library and Information Science Educators (ALISE) and knowledge of curriculum initiatives across North America confirmed the absence of an applicable model to use even as a starting point for the Faculty’s project.

Because of my background in curriculum development in higher education and my familiarity with the community of information professionals, I was engaged as a project consultant and committee facilitator with a mandate not only to prepare a series of recommendations on a curriculum direction, but to establish a curriculum development model that would guide the current curriculum design process and provide a framework for further curriculum development initiatives at the Faculty.

The key factors that influenced the curriculum development problem, as noted in Chapter 1: Problem to Be Investigated, became variables that also influenced the design process. These factors were directly linked to the three main elements of curriculum design:

1. *The learner* -- identification of an audience for the program (i.e., moving beyond traditional sectors of the information profession -- librarians, archivists, and information systems managers) with a focus on mid-career professionals.

2. *The content focus* -- the evolving nature of the discipline (i.e., changes in technology and the use of information) and the hybrid of competencies (i.e., mix of content from several disciplines) needed by the information professional.

3. *The instructional approach and program structure* -- in tandem with the targeted learner, a need to meet the requirements for and attitudes of mid-career adults pursuing continuous learning opportunities (i.e., extensive prior learning, broad life and professional experience, and demands of senior positions combined with busy lives).

**Case Study Context**

With funds allocated from the university’s provost, the Dean hired me as a consultant and together we created the Program Development Advisory Committee (PDAC). A goal and corresponding objectives for the PDAC (see Appendix A-2) were drafted. The PDAC Chair, a professor from the Faculty, was appointed. And a 9-month time frame for developing the
report of recommendations was established. As a final step before implementing the project, PDAC members were solicited.

The PDAC met a total of five times within an 8-month period. However, the group also communicated in between meetings via a dedicated listserv. E-mail facilities played a significant role in providing the committee with drafts and revisions of documents, summaries of interviews, a preview of data collection instruments, and various other updates on committee activities. A PDAC website, linked to the Faculty's website, was also developed where introductory and reference documents were posted. The website was used by the PDAC members as well as key informants, interview and survey participants, and interested stakeholders. The address for the PDAC website was included in all communications as a means of introducing the Faculty and the PDAC mandate to the research participants and interested stakeholders.

The Dean, the PDAC Chair, and I (as the PDAC consultant) met more frequently, both formally and informally, than the full committee in order to discuss the progress of the project, plan next steps, discuss data analysis and emerging patterns, and review drafts of various documents before distribution to the PDAC. The PDAC research project comprised four phases:

**Phase I - Planning**
Appointment of committee members; creation of committee mandate, objectives, and time line; identification of research needs and approaches.

**Phase II - Data Gathering**
E-mail survey; PDAC meeting discussions; focus group meetings; key informant interviews; alumni survey; site visits; institute planning sessions.

**Phase III - Data Analysis**
Creation of coding key; synthesis of information by broad categories; identification of program design components.

**Phase IV - Findings**
Creation of curriculum program recommendations; preparation of report of recommendations including business plan; review of recommendations with the Dean and other stakeholders.
The Conceptual Framework -- Narrowing the Research Study Focus

Developing a conceptual framework forces you to be explicit about what you think you are doing.  

(Robson, 1993, p. 150)

Like a John Irving novel that imbeds a story within a story, this case study could have encompassed the research activities and findings of the PDAC within the analysis of the PDAC’s process. As noted in the project plan above, the PDAC undertook a number of related research projects during Phase 2 in order to obtain the data on which its recommendations would be based. For example, focus group discussions were held with key informants from government, the information industry, and the information professions to understand the direction of information use in organizations. A survey was distributed to a subsection of the Faculty’s alumni who were considered mid-career in order to understand the challenges affecting them in their work place and to ascertain their educational needs. A group of information professionals were interviewed to assess the competencies required to meet current and future job demands. And information was gathered through site visits to organizations that had re-engineered traditional library services into knowledge management centres as examples of best practice.

A challenge for this case study was to stay focused on the process of working through a curriculum development project in order to create a design process model and to provide a critical analysis of that process. With a study of a study, there were many opportunities to diverge into the PDAC’s research activities and findings, thus creating confusion for the reader.

As I worked through my analysis of the case study’s data, I began by creating graphical representations of the conceptual frameworks for the two studies. These diagrams, a technique suggested by Robson, helped keep me focused on the case study. Figure 1 is a diagram of the PDAC’s research project conceptual framework -- its main features and presumed relationships. It represents the conceptual framework of the subject of this case study.
Figure 1. PDAC Research Project Conceptual Map

Figure 2 represents the conceptual framework for the case study of the PDAC's curriculum design process. As noted, the second diagram is almost a subset of the PDAC diagram given that the PDAC was also charged with establishing a curriculum design process.
A comparison of the two frameworks is important for two reasons. First, there is a close relationship between the two research projects as one is a case study of the other. Understanding the curriculum problem and research activities of the PDAC project provides a context for my case study of that process. Second, identifying the subset of features and their relationships for my case study helped to narrow the focus, select the sample, and maintain the distinction between these related research studies.

**Case Study Sample**

*It is just not possible to study everything.*  
(Robson, 1993, p. 154)

Typically, a curriculum development project in professional higher education includes a wide variety of participants both internally (i.e., development team, stakeholders, current and prospective students, instructors) and externally (i.e., the profession's associations, current and prospective employers, members of society as a whole). In total, the PDAC
research activities included over 100 participants. Given the need to design a manageable case study and remain focused on the identification of a curriculum development process from the PDAC's work, I selected a sample for the case study from the broader PDAC experience.

The sample for the case study is limited to the PDAC members, which included: four professors from the Faculty with a diverse range of expertise in information systems and technology, organizational management, professional competence measures, archives, and special librarianship; one Ph.D. student from the Faculty with an information technology background and research interest in Internet searching behaviours; one senior manager from the provincial government responsible for implementing information technology infrastructures for public libraries; one corporate librarian responsible for a knowledge management initiative; one director of research and development from a private sector software design company; one library director from the university's library system with special and academic library experience; and consultant from the information industry with a specialization in curriculum studies in higher education. Three of the PDAC members were also alumni of the Faculty. The Dean was an ex officio member of the committee and was included in the sample. In total, the sample consisted of 11 people.

Most of the PDAC members had some experience with planning and teaching courses either in degree programs or continuing education programs, many at the Faculty. Several of the Faculty's representatives had participated in other curriculum development projects and program evaluations. For example, the chair and two committee members from the Faculty's recent evaluation of the redesigned core masters degree program were on the PDAC. However, none of the PDAC members, including the Faculty professors, had formal training in the field of curriculum development. This lack of background meant that I, as the PDAC consultant, would be the resource person on curriculum theory and practice as well as the facilitator of the curriculum design process.

Selection criteria for PDAC membership included expertise in both theory and practice in the discipline, knowledge of current trends in information science and the information professions, network of resources in their given field, understanding of the role of the Faculty in providing professional education, experience with planning new initiatives, motivation to complete a task, ability to effect change, and a command of critical thinking and problem-solving skills. The high caliber of the PDAC members -- their credentials and professional
commitment to the field of information studies -- facilitated the progress of the curriculum design process.

I selected the PDAC members as the sample for this case study because: they participated in the entire curriculum design process, they were familiar with the components of the design process, they influenced the direction and development of the design process, they were responsible for the successful completion of the PDAC’s objectives, and they evaluated their involvement with the design process.

Due to their extensive involvement, the PDAC members were the best informed subjects on the PDAC’s curriculum development process. For the purposes of this case study, each PDAC member functioned as a key informant, a person who “… understands the culture but is also able to reflect on it and articulate for the researcher what is going on” (Merriam, 1988, p. 75).

Influencing Frameworks

As discussed in Chapter 2: Review of Related Literature, approaches to curriculum development and models to guide a curriculum development project have been presented in the literatures of higher and professional education. However, I was unable to identify examples of curriculum development models or case studies specific to library and information science (LIS) that prescribed an approach or process to solve curriculum problem at the Faculty. The unique characteristics of the curriculum environment warranted the development of a new model.

Oliva (1988) offers the following choices for the identification and use of models to guide the curriculum development process:

Practitioners... have the heavy responsibility of selecting a model in their particular field from the often bewildering variety in the literature. If the practitioners are not disposed to apply models they discover, they may either design their own, by no means a rare event, or may reject all models that prescribe order and sequence. They may thus proceed intuitively without the apparent limitations imposed by a model. After proceeding intuitively, the practitioners may then ‘put it all together’ and come out with a working model at the end of the process instead of starting with a model at the beginning.

(p. 160)
Once the curriculum problem was assessed and existing approaches were evaluated, I decided not to proceed without any direction in the intuitive approach discussed by Oliva. Instead, I chose to synthesize the elements from two existing frameworks from general applications in higher education and one framework from a professional school of management to guide the PDAC's design process. Each framework focused on a particular aspect of curriculum development: the theoretical foundation to plan the approach; a model to direct the process; and reflection on a practical application to provide advice from experience. By combining the strengths of each approach, I was able to plan a general direction for the PDAC process and, more importantly, identify a starting point for solving the curriculum problem at the Faculty.

As I began analyzing the case study data, I located an additional framework that was central to interpreting the PDAC's curriculum design process. Toombs and Tierney (1995) present a method of conceptualizing the curriculum problem as a "problem in design." Although this framework was not introduced to the PDAC until late in their design process, the approach was instrumental to my analysis. An overview of the problem in design approach, as an influencing framework for me as the PDAC process facilitator, concludes this section on the three frameworks used to guide the PDAC's project.

1. Theoretical Foundation

"Discussions of curriculum too often are preoccupied with means rather than ends, with details rather than structure, and with courses rather than learning." (Dressel, 1971, p. 21)

Dressel (1971) provides a comprehensive discussion of the theoretical underpinnings of curriculum development that was used with the PDAC in order to highlight the fundamental principles and concepts of the curriculum design process. Although most PDAC discussions focused on process, on getting the job done and meeting the committee's objectives, the PDAC's work, nonetheless, reflected a combination of Dressel's continuums, essential elements, and facilitating agents.

When discussing the curriculum design process in the report of recommendations, the PDAC did not articulate a specific philosophy or theory of curriculum development. However, the final product reflects the theory behind the practice. In particular, the curricular direction recommended by the PDAC, to be offered through a portfolio of programs, could
easily be plotted within Dressel's four continuums (i.e., individual student vs. disciplines; problems, policies, and actions vs. abstractions, ideas, and theories; flexibility and autonomy vs. rigidity and conformity; and integration, coherence, and unity of learning experiences vs. compartmentalization, inconsistency, and discord).

2. Curriculum Development Model

*The process that we use must be effective, efficient, and politically sensitive.*

(Diamond, 1989, p. 2)

The curriculum development model created by Diamond (1989) formed the basis of the PDAC's procedures and work plan. Diamond outlines the advantages of using a model as: key factors are identified, a procedural guide is in place, roles of developers and progress of the initiative can be monitored, and efficiency is improved through a reduction of duplication of effort and assurance that critical questions are asked and alternative solutions explored (p. 4).

Diamond's model is divided into two phases (see Appendix B-1 for the complete model). The PDAC focused on the first phase of the model, Project Selection and Design (see Figure 3). However, the PDAC recognized the responsibility of a design phase to lay the groundwork for subsequent development, implementation, and evaluation.

Figure 3. Process for Educational Program Development - Phase 1 - Project Design and Selection
Within Phase 1 of Diamond's model, the PDAC concentrated on the last two of three components. The first component, Project Generation and Selection, had already been outlined in Faculty's program priorities (i.e., its academic plan) -- a project had been selected as a development priority. The second component, The "Ideal" Selection, provided a focus for the first meeting where PDAC members brought their own vision of the ideal to the table for discussion. This theme was also extended throughout the data gathering phase, especially in the key informant interviews. The ideal continued to be the focus throughout the design phase and the creation of the curriculum design recommendations. The rigors of reality were applied to the proposed ideal in the form of a business plan that outlined the approach for implementing the proposed portfolio of programs. And the third component, Operational Sequence, focused the results of the data analysis in order to outline the more tangible element or logistics of the program.

In addition to the actual model, Diamond's work provided guidance to the PDAC in discussing the complexity of designing, implementing, and evaluating curriculum. Diamond identifies five elements that should be considered in any curriculum development: a sensitivity to the academic setting of the project; an awareness of the capabilities, interests, and priorities of the students the program is designed to serve; a knowledge and appreciation of the discipline; an understanding of the resources and options; and an understanding of the instructional goals that are required of all students, regardless of their major or long-term personal goals (pp. 6-7).

3. Practical Application of Curriculum Development

We believe that our past experience, as reflected in these six lessons, has enabled our subsequent planning efforts to be more efficient and effective.

(Boyatzis et al., 1995, p. 30)

Although numerous LIS curriculum development initiatives were underway in North America at the time of the Faculty's project, none provided an example of best practice and advice in the form of lessons learned as well as the work of Boyatzis, Cowen, Kolb, and Associates (1995) who reported on a significant curriculum revision initiative at Case Western Reserve's Weatherhead School of Management (WSOM). Their empirical study of the results of the redesign showed a marked increase in the quality of the program that had been in crisis before the school's efforts to shift their focus from teaching to student learning. The goal of
the revision was to design a curriculum that would be centred on student knowledge, not the organization of the discipline (p. 10).

I provided the PDAC members with an outline of the lessons learned at WSOM, which complemented the elements of the other two influencing frameworks. Briefly, these lessons were: adopt an outside-in perspective, build on the seeds of vision and strategy that lie within, develop a collaborative attitude, challenge convention and tradition, focus on substance rather than form, and provide multifaceted leadership (pp. 17-31).

4. Curriculum Development Approach

*Design is the placing of subject matter so as to put it to its greatest advantage or to have it in the most interesting shape, form, or positions possible.* (Emerson as cited in Toombs & Tierney, 1995, p. 333)

Toombs and Tierney (1995) combine the literature of art and engineering with curriculum planning to provide a method of approaching curriculum development, a way of looking at the curriculum development initiative in terms of a problem in design. They agreed, along with other cited references, that focusing on curriculum theory was inadequate especially in terms of the need for practical application of curriculum. The concept of design -- defining a problem and formulating a solution -- provides a framework for approaching the curriculum problem where the responsibility lies with the inventor, the faculty or members of the curriculum development team. Their approach has been used across a variety of higher education disciplines. Curriculum projects in environmental studies, nursing, continuing education, and general education have successfully adapted this approach to curriculum problems situated in unique environments.

The framework established for design analysis is based on three components presented in an open matrix: content, context, and form. These components, along with multiple levels of subdivisions, form a checklist that I used to ensure discussion of the major elements of a program.

Toombs and Tierney’s approach was valuable to the PDAC on several levels. First, the concept of design, of defining a problem and proposing a solution, was the essence of the mandate given to the PDAC by the Dean. And, as noted earlier, thinking in terms of a design problem was extremely useful to me as the researcher seeking to make sense of thousands of pieces of data. In addition, their framework served as a checklist of components to be
included in a curriculum design. This list was used to ensure that the key program components were addressed in the report of recommendations.

While the literature in curriculum development in higher education is more extensive than the four frameworks highlighted here, I thought that the aggregate of these approaches, which at many levels complemented and supplemented each other, represented a manageable background in curriculum theory and practice to bring to the PDAC members in order to guide the curriculum design process.

The influencing frameworks not only provided guidance for the design process, but highlighted areas where support materials for the PDAC should be developed. For example, on the basis of advice in Boyatzis et al.'s lessons learned, I created two reference documents that provided background information for the PDAC. First, I developed *The Faculty Change Time Line* by reviewing calendars and marketing materials about the Faculty. This chronicle of events showed that the Faculty had successfully implemented significant, systemic change within the last 25 years. Second, I created *The Faculty Stakeholder Profile* through analysis of documentation and interviews with members of the Faculty. The profile outlined the constituencies (e.g., faculty, students, Faculty Council, Dean's Advisory Board, alumni, information professionals, employers) that the PDAC should be aware of when planning research activities, evaluating directions, and choosing program components. The profile was also useful in planning approaches that recognized political sensitivities by identifying and defining the various groups of people who would be involved with curriculum changes (e.g., information professionals, Faculty Council, student population).

**Data Collection**

*Case study permits you to approach data collection in a variety of ways, ranging from loose and unstructured to tight and heavily pre-structured.*

(Robson, 1993, p. 157)

Data were collected for this case study from multiple sources using a variety of techniques. The primary method was participant observation, which encompassed all of my activities associated with being a member as well as the facilitator of the PDAC. Robson (1993) and Merriam (1988) both recognize participant observation as one of the most common data collection techniques used in case study research design. However, Merriam
provides a further distinction between participant as observer and observer as participant and suggests that Gans's (1982) notion of *researcher participant* better reflects reality in that the researcher is rarely either a total participant or a total observer (Merriam, 1988, p. 93). I chose to use the term researcher participant instead of participant observer, as the latter suggests a passive role, while the former suggest the active involvement that better describes my role in this curriculum design project.

The data that I collected as a researcher participant were obtained from three types of sources. First, evidence was collected from the actual PDAC process including: notes that I took during the PDAC’s five formal meetings; transcripts of meeting tapes that recorded all full group discussions; individual email discussions with the PDAC members; comments distributed to all PDAC members via the PDAC listserv; and the work plan, checklist, and diary that I maintained as the PDAC consultant including memos to the Dean and the PDAC Chair. Second, I collected evidence from the materials created by the PDAC. These materials included: working documents, position and concept papers, research instruments, research analysis, and report of recommendations. Third, the PDAC members participated in a discussion and a survey about the process in which they had been involved for 9 months.

As a researcher participant, I learned firsthand the many challenges of participating in a process and observing it with the intent of formulating a critical analysis at the same time. In order to supplement the primary data collected as a researcher participant and to verify my analysis of the findings, two other sources of secondary data were used. First, the working documents generated by the PDAC, which filled two four-inch binders, provided a record of the PDAC’s process through the documents it generated for discussion -- in particular the various drafts of the program design components, the participant profile, program portfolio structures, definitions, and other position and concept papers that the PDAC wrote as either a rationale for or assumptions about a specific element of the proposed curriculum design. Second, the elements of the PDAC’s research activities (i.e., the research plan, data gathering tools, and findings) provided an additional secondary source of data regarding their design process, particularly how they gathered and analyzed data in order to support their program recommendations.

A third source of data was a survey of the PDAC members regarding the curriculum design process. A request to submit a reflection on the PDAC’s process, including several
questions to stimulate their reflection, was distributed at the fourth and final working meeting of the committee (the fifth PDAC meeting was more of a celebration for completing the work than it was actual work on the design process). The request from the PDAC Chair to provide feedback was prefaced with a discussion that solicited general impressions and comments on the process from the PDAC members. Appendix B-2 contains a complete listing of the data collected for analysis in this case study.

**Data Analysis**

*From the beginning of data collection, the qualitative analyst is beginning to draw conclusions, to decide what things mean, and to note regularities, patterns, explanations, possible configurations, causal flows, and propositions.*

(Miles & Huberman, 1988, p. 236)

The process of qualitative data analysis that I followed was based on the work of Miles and Huberman (1988). Their framework consists of four phases: data collection, data reduction, data display, and conclusion-drawing and verification. Miles and Huberman acknowledge the need for a researcher to be explicit about the procedures and thought processes used to analyze the data collected in a qualitative study in order to address concerns regarding validity and verifiability, while also recognizing that qualitative data analysis is considered an art, an intuitive process.

In this case study, I used a form of *anticipatory data reduction* whereby I had already established the need to identify the framework of a curriculum design process and its influencing factors. I had predetermined that my data analysis would focus on identifying the various steps in the PDAC’s curriculum design process. In other words, I analyzed the data anticipating an outcome (i.e., a curriculum development model) rather than waiting for an outcome to present itself (i.e., grounded theory). The coding scheme devised to categorize the data elements (i.e., data reduction) paralleled the scheme used for the data analysis of the PDAC’s research in that it sought to identify directions for the various curriculum components. This coding scheme outlined the criteria for classifying the data into three broad categories: the design process model -- actions and corresponding elements; the factors influencing the curriculum design -- both internal and external; and the lessons learned by the PDAC about curriculum development (see Appendix B-3).
Data elements from the primary and secondary research sources were recorded on various sizes and colours of adhesive notes (i.e., sticky notes) and placed on a wall chart under the broad categories that emerged in the initial round of coding. This technique allowed me to group and regroup data elements while identifying patterns and clusters with different colours and sizes. A series of elements and subpoints emerged and generated a flow chart that displayed the relationship among the categories (i.e., data display).

During the final phase of analysis, I sought to identify the PDAC's key actions that defined a curriculum design process and the explanations that reflected the interrelationship of the variables that influenced the PDAC's design process. A general strategy that I used in the data analysis phase is defined by Miles and Huberman (1988) as "...particulars are subsumed into the general" -- a technique that basically reduces the number of data elements and shows a pattern (pp. 236-237). The result was the basis of the curriculum design process model, which is discussed further in Chapter 4: Findings.

To verify the conclusions, I used two approaches. First, I "checked for representativeness" through a verification process that cross-referenced elements identified as forming the curriculum design process with the processes reported in the PDAC's final Report of Recommendations -- a document that was edited by the PDAC Chair and endorsed by the PDAC members. Second, I "got feedback from informants" through discussions with the Dean throughout the data analysis phase and writing of this case study.

In summary, the data analysis process sought parallels to, as well as new diversions from, the four influencing frameworks outlined earlier (i.e., Dressel, 1971; Diamond, 1989; Boyatzis et al. 1995; and Toombs and Tierney, 1995) in order to identify a range of program components, design characteristics, influencing factors, and an emerging curriculum design process model.

The Researcher Participant

A significant challenge to the validity of a case study in which the data collection and analysis are primarily completed by a single person is establishing the credibility of the researcher in order to increase the trustworthiness of the study. Diamond (1989) recommends that the curriculum development team should include a person "...with teaching or professional experience outside the content area..." as the curriculum developer, a person with
no vested interest who can facilitate the team’s progress (pp. 13-17). In this case study, I functioned not only as an active participant in the PDAC’s design process, but as a participant with significant responsibility for guiding the committee’s process and preparing its final report.

While I have a background in library and information science — I was trained as a teacher-librarian and worked for 12 years in the public school system — library and information science is not my area of expertise. In order to better understand the discourse of library and information science studies and the philosophy of the Faculty’s approach, I audited one of the Faculty’s courses that is a core course for all three specialty streams and provides an introduction to the discipline of information science. In addition, I prepared for the PDAC project by: reviewing numerous publications about the Faculty, including its recruitment video; reviewing various program evaluations completed at the Faculty within the last 5 years, including its ALA accreditation and the provost’s review; comparing the program components and structures of all Canadian LIS schools; attending a seminar on knowledge management initiatives in Canadian corporations; reviewing the major LIS curriculum development projects underway in the United States, with an emphasis on projects funded by The W. K. Kellogg Foundation (due to their significance and scope); and researching the Faculty’s governance structure, which is outlined by its parent organization (i.e., a school of graduate studies) and the province’s Council of Graduate Studies.

My expertise in curriculum development theory and practice grew throughout my program of formal study. I majored in the area of curriculum development, starting with a bachelor of science in education degree and a masters of education in humanities and social science curricula. My current doctor of philosophy program has focused on curriculum development in higher education. Recent course work includes: qualitative research methods, leadership and change management in education, foundations of curriculum, curriculum and course planning in higher education, and concepts of learning. During my doctoral studies, I completed three research projects based on the works of Merriam (1988) and Miles and Huberman (1988), one where the qualitative research method (i.e., data display and reduction) paralleled the techniques used in this case study. In addition, I am an OISE/UT Scholarship recipient.
My formal education in curriculum and qualitative research methods is combined with my experience in curriculum development as a primary and junior high school teacher and an instructor at the University of Manitoba's Faculty of Education. In addition, my experience with the curriculum development process in higher education was obtained through the development of the courses that I taught at the university level and during a recent research study that investigated how professors use various forms of information in course planning. As a result of that study, a model for information use as part of the curriculum development process was identified.

Summary

The design of this research study follows a case study strategy where a particular event is studied within its real world setting by gathering evidence from a variety of sources (Robson, 1993). Using the PDAC members as the sample, data was gathered from the curriculum design process through an analysis of committee meeting notes and transcripts, working documents, committee research tools and findings, and a survey of committee members. As a researcher participant responsible for facilitating the curriculum design team, I had extensive first-hand experience with all aspects of the committee’s work.

Using the data analysis approach of Miles and Huberman (1988) (i.e., data collection, data reduction, data display, and conclusion drawing), I was able to identify a curriculum design process model, which is further discussed in Chapter 4: Findings.
Chapter 4: Findings

Introduction

The primary purpose of this case study was to develop a model that reflected the process followed by the Program Directions Advisory Committee (PDAC) as it created recommendations for a new curriculum direction and identified a curriculum design methodology for a graduate faculty of information studies (the Faculty). Through a critical analysis of a curriculum design project, I sought to identify the actions taken, the resources used, and the products created in order to find a solution to a stated curriculum problem. The design process model could then be used in subsequent curriculum development projects at the Faculty.

This case study’s evidence was gathered from a variety of primary and secondary sources: notes, observations, and work plans of the researcher participant; transcripts of PDAC meetings; working documents, research tools, and findings from the PDAC’s research program; and a survey of PDAC members. In this chapter, I present the findings of my data analysis and propose a procedural model that represents the design process that was followed by the PDAC. When discussing the design process model, I also provide a description of the PDAC’s work. Components of the design process model include: the phases of the design process; the actions, inputs, and outputs that interact at each step of the design process; and the factors that influence the entire design process.

As noted in Chapter 3: Methodology, a challenge with this case study was to stay focused on the PDAC’s process as the subject of my research study -- not to discuss the findings of the PDAC’s research projects. However, at the point of reporting the findings of this case study of the PDAC’s process, the two research studies are no longer as distinct as they were at the onset. In fact, the findings from the PDAC’s research efforts were integral to the critical analysis -- especially to the description of resources used and materials produced (i.e., inputs and outputs). The findings of my case study seek not only to describe a curriculum design process but also to provide a synthesis of thought and experience that extends the PDAC’s Report of Recommendations (see Appendix A-3 for the Table of Contents and Executive Summary of the PDAC’s final report).
In a discussion of curriculum planning models, Posner (1988) suggests that the wide variety of approaches to curriculum development can be discussed in terms of responses to three curriculum planning questions:

1. The procedural question: What steps should one follow in planning a curriculum?
2. The descriptive question: How do people actually plan curricula; i.e., what do they do?
3. The conceptual question: What are the elements of curriculum planning and how do they relate to one another conceptually?

(pp. 77-78)

The following discussion of this case study's research findings parallels Posner's approach to discussing curriculum planning models. First, a procedural model that outlines the process or steps that were followed by the PDAC is proposed. Second, a description that forms the narrative of how the curriculum was designed supplements the stages of the process model. And third, the concepts of the design process are explored through both the identification of design phases and influencing factors.

**A Proposed Curriculum Design Process Model for Information Studies**

One of the first tasks in planning the approach of solving the Faculty's curriculum problem was to define a starting point and the key activities that would guide the design process. As noted in Chapter 3: Methodology, the curriculum practitioner may decide not to use any of the prescriptive or descriptive models evaluated (Oliva, 1988) -- which was the case with the PDAC curriculum design process. However, unlike Oliva's suggestion that a practitioner may simply proceed intuitively, I felt it necessary to build on the experience of other curriculum planners in higher and professional education. A synthesis of three frameworks was employed as a reference for both starting the process and checking its progress.

In developing a process model based on the PDAC experience, Diamond's curriculum development model had the most influence of the frameworks chosen for the PDAC process on the findings of this case study.

Diamond's (1989) model (see Appendix B-1) was chosen as a framework to guide the PDAC's curriculum design process for four reasons. First, Diamond's model reflects a two
stage process. The first phase, *Project Selection and Design*, is followed by the second phase, *Production, Implementation, and Evaluation*. Since the PDAC's mandate was to recommend a curriculum direction and design, not to fully develop a curriculum, Phase 1 of Diamond's model provided a process guideline specific to the design phase required by the PDAC.

Second, the structure for implementing Diamond's curriculum development process paralleled several PDAC characteristics. For example, Diamond suggests that a team of educators be appointed to work through the development process. One team member should be a person external to the discipline with experience in curriculum development to act as a team facilitator. Both of these characteristics were present in the PDAC project.

Third, Diamond's model relies heavily on obtaining research data in order to inform the design process. Given the need to consult a wide variety of stakeholders and key informants across a wide spectrum of information professionals and their employers, a research approach would provide the data required to support the PDAC's final recommendations. In addition, the PDAC was charged with identifying trends in the information environment and the competencies required by information professionals in order to meet the information needs of their organizations.

And fourth, Diamond suggests that when establishing the various components of a curriculum, the developers should be *thinking in the ideal*, an approach that first identifies what might be possible without applying practical constraints until later in the development process. This approach was well suited to the PDAC's charge from the Dean to identify the content direction that the program should take.

Once the analysis of the case study data began, Diamond's model provided me with an additional guideline. Diamond suggests that his curriculum development model is less complicated and requires less time between start and implementation than most models of its type (p. 6). His procedural model served as a standard in process design -- a model that concisely defines the steps necessary to facilitate a process focused on results. Emulating Diamond's simplicity and directness became a goal for me while developing my model of the PDAC's design process.

Diamond's model is intended as a general framework for curriculum development projects in higher education. Its theory and approach combine with application and evaluation to provide the basic principles and concepts of curriculum development that could be applied
to a specific curriculum problem. However, the model did not provide direction for addressing a number of key issues present in the Faculty's environment or particular elements of the Faculty's curriculum problem. Based on the findings of this case study, I identified *The Information Studies Curriculum Design Model*, a procedural model that reflects a synthesis of elements from Diamond's curriculum development model and elements unique to the design process that was undertaken in order to satisfy the PDAC's goal and objectives.

The following sections of this chapter describe the three phases of the proposed design process model in terms of the *actions* that distinguish a process, the *inputs* and *outputs* associated with a process, and the *factors* that influence the entire design process model. A critical analysis of the design process, including the challenges to curriculum development in information studies programs, the lessons learned from the PDAC process, and the role of a curriculum consultant, are found in Chapter 5: Summary and Conclusions.

**Elements of the curriculum design process model.** *The Information Studies Curriculum Design Model* that represents the PDAC curriculum design process is outlined in three phases: project definition, solution design, and solution presentation (see Figure 4). As with many process or operational models, the linear appearance of the graphical representation is somewhat deceptive. Although progress appears to be attained through a series of lock-step actions during a journey from start to finish, the actual process of defining problems and designing solutions is not strictly linear. While there is a beginning and an end plus a series of steps (i.e., the means) in between, there is a constant cycling of information (i.e., data gathering, data analysis, application) and an interaction with influencing factors that takes place during a decision-making process.

The model identified primarily answers Posner's (1988) procedural question of what steps should one follow in planning a curriculum. The key actions are represented in the phases that move the design process from start to finish. At the same time, the purpose of a case study is to describe a phenomena. As such, I provide a description of the how people designed a curriculum direction with a narrative that addresses the more complex interaction of process, information cycling, and influencing factors in a narrative that accompanies each phase of the prescriptive model.
I characterize each phase of the design process model by identifying the key process or processes that define the phase. These steps within each phase are identified by the actions, inputs, and outputs that characterize that particular segment of the process. Actions (i.e., steps that move the process to completion or the means that move toward an end) describe the key activities that take place. These activities are shaped by specific inputs (i.e., information that informs or influences the process), and outputs (i.e., information that forms the basis of a decision or reflects the results of an action) are generated in order to create the solution for the curriculum problem.

In addition to the three phases of the model, two influencing factors were identified that interacted with the process at every phase of the curriculum design project. These elements were identified because of the PDAC’s recognition of the aims and responsibilities of professional education and the PDAC’s desire to create meaning -- the process of ensuring that people not directly associated with the process would understand the terms and concepts used by the PDAC.

The design process model is presented in two formats. First, I have created a graphical representation of the model -- a prescriptive model in the form of a work-flow chart that highlights the inputs, key steps, and outputs as well as the influencing factors (see Figure 4). Second, I have developed a table based on the design phases and expanded each process in a descriptive approach that outlines the specific elements of the PDAC’s curriculum design project as they relate to the process model outline (see Table 2). This second representation provides a descriptive account of the PDAC process and addresses Posner’s (1995) second question of how people actually design curriculum. The various factors, phases, and steps have been numbered to correspond with the narrative that is found following the presentation of the two formats of The Information Studies Curriculum Design Model.
Figure 4. Information Studies Curriculum Design Model
### Table 2
PDAC Curriculum Design Model

<table>
<thead>
<tr>
<th>Phase 1 Define Curriculum Project</th>
<th>Phase 2 Design Solution</th>
<th>Phase 3 Present Solution</th>
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<tbody>
<tr>
<td><strong>(Inputs)</strong></td>
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<tr>
<td>- Academic Plan</td>
<td>- Research Analysis</td>
<td>- Research Analysis</td>
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<tr>
<td>- Dean's Directives</td>
<td>- Team Expert Opinion</td>
<td>- Working Documents</td>
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<td>- Influencing Frameworks</td>
<td>- Competitive Intelligence</td>
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<td>- Program Structures</td>
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<td>- Business Case Outlines</td>
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<td><strong>Define Project</strong></td>
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<tr>
<td><strong>(Actions)</strong></td>
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<tr>
<td>- State Curriculum Problem</td>
<td>- Research Analysis</td>
<td>- Research Analysis</td>
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<tr>
<td>- Identify Project Goals &amp; Obj.</td>
<td>- Team Expert Opinion</td>
<td>- Working Documents</td>
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<tr>
<td>- Establish Environment: Team &amp;</td>
<td>- Competitive Intelligence</td>
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<tr>
<td>Project Structure; Process</td>
<td>- Program Structures</td>
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<td>Frameworks; Proj. plan; Budget</td>
<td>- Business Case Outlines</td>
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<td>- Business Case</td>
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<td>- Distinctions</td>
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<td><strong>(Outputs)</strong></td>
<td>- Working Documents</td>
<td>- Report</td>
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<tr>
<td>- Goals and Obj. for Design Team</td>
<td>- Concept/Position Papers</td>
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<td>- Process Outline &amp; Guiding</td>
<td>- Curriculum Design Components</td>
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<td>Principles - Model</td>
<td>- Recommendations</td>
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<td>- Project Plan &amp; Milestones</td>
<td>- Program Distinctions</td>
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<td>- Budget</td>
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<td>- Definitions</td>
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<td>- Proof of Concept Outline</td>
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<tr>
<th>Factor 1</th>
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<tr>
<td><strong>Aims and Responsibilities of Professional Education</strong></td>
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<tr>
<td>Factor 2</td>
<td>Create Meaning</td>
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The Information Studies Curriculum Design Model

**Phase 1 - define the curriculum project.** Phase 1 of the curriculum design process begins with defining the parameters of the project (see Figure 5). At first glance, this phase seemed unnecessary for the PDAC. Unlike the first step in Diamond's model where a project needed to be selected and generated, the PDAC's project was already outlined by the Faculty's academic plan, funds had been secured from the provost's office, and the PDAC project was an established priority for the Dean. However, there was a need to define the PDAC project in terms of creating the environment, identifying a process framework and guiding principles, establishing a general direction, and setting objectives for the design team.

![Diagram of Aims and Responsibilities of Professional Education](image)

*Figure 5. Phase 1 - Define the Curriculum Project*
The key activities during the project design phase were completed in a series of planning meetings among the Dean, the PDAC Chair, and me as the PDAC consultant. At the first meeting with the PDAC members, a general direction for the project was presented by the Dean. During subsequent meetings, the Dean and the PDAC Chair continued to reinforce that the content direction as stated in the Faculty’s academic plan was a placeholder, that the specific content direction was to be recommended by the PDAC. Although defined in the first phase of the process, the curriculum problem continued to be reviewed during the entire project, particularly as the PDAC completed its research and began formulating the recommendations.

Phase 1 - define the curriculum project - actions. The first phase of the model is characterized by three planning activities that parallel the project generation activities in step one of Diamond’s model. These key activities include defining the curriculum problem, identifying the goal and objectives, and establishing the project environment. The majority of work on these planning activities was completed before the appointment of the PDAC members and was based on background work that I had undertaken in order to propose a work plan and timeline to the Dean. However, modifications were made to earlier planning decisions as the PDAC project developed, with PDAC members expanding the discussion and improving the process.

1. Defining the curriculum problem.

The curriculum problem was outlined by the program development section of the Faculty’s academic plan (i.e., the Faculty’s programmatic priorities) and the Dean’s supplementary directives. Through initial environmental scanning, the Faculty recognized that there was an opportunity to provide a new program in order to meet the needs of mid-career information professionals seeking further education in a content area yet to be defined. Additional elements of the curriculum problem addressed: a financial model -- the program should be a privatized program and should be self-supporting at the end of 3 years; a program structure -- the program should be modeled on an executive masters of business administration degree; and a direction -- the new program should be separate and distinct from the Faculty’s current core masters degree program.
2. **Identifying the goal and objectives.**

The Faculty sought recommendations on a program development design and strategy. This simple fact became the goal of the PDAC. Objectives were developed as parameters for the project; they formed the basis of the PDAC’s work plan and research program that was designed to solve the Faculty’s curriculum problem. Based on the current environment of information studies, the PDAC was asked to make recommendations on the prospective student for whom the program would be designed, the competencies required that would form the basis of the curriculum content, and the teaching methods that would best meet the adult students’ needs. An additional objective was suggested by PDAC members to create a financial model to ensure that the program would be self-supporting within the given time frame (see Appendix A-2 for the PDAC’s goal and objectives outline).

3. **Establishing the project environment.**

Once the goal and objectives for the project were drafted, the structure for solving the curriculum problem was established. Following Diamond’s suggestion regarding the creation of a team and Boyatzis et al.’s recommendation regarding multilevel leadership qualities, the Dean and I identified possible members and approached them to work on the curriculum design project. The members were chosen for a range of subject specialities within the field of information studies, a range of practical experience in private and public sector information industry positions at a senior level, and a progressive attitude toward growth and change. As the committee structure was taking shape, work proceeded on identifying a process framework, creating project milestones and a project plan outline, and allocating resources. My goal, as the PDAC consultant, was to identify a process to be used as a guideline and to ensure that the participants’ responsibilities were focused on providing suggestions and analyzing approaches that culminated in constructing recommendations, not on the logistics and details of gathering data or the day-to-day activities of a committee.

**Phase 1 - define the curriculum project - inputs.** The inputs at this phase of the process include all of the information used to design the curriculum project. The PDAC identified the curriculum problem and stated its goal and objectives from two main sources: a program development statement in the Faculty’s academic plan, referenced in Chapter 1: Problem to Be Investigated, and the directives verbally outlined by the Dean. While the
program development statement from the academic plan provided written directives, The Dean's directives were presented verbally at the inaugural meeting and clarified or expanded on in subsequent PDAC meetings. The design of the PDAC environment was guided by a series of frameworks -- examples of best practice from other curriculum development projects.

1. *The academic plan.*

The Faculty's academic plan is a guideline for priorities and actions, a 5-year work plan created by the faculty, the Faculty Council, students, and administration and presented for approval to the provost's office. A statement regarding program development provided direction to the PDAC in the form of program characteristics recommended at the time that the academic plan was written (e.g., privatized program self-supporting in three years of program development, executive masters program structure, content separate from current MISt information systems stream).

2. *The Dean's directives.*

The Dean's directives were meant to clarify and interpret the intent of the academic plan statement and to acknowledge changes in the information studies environment since the plan was written. For example, the Dean explained that there was no written recipe implied in the academic plan, that the design process was to be consultative and the constituencies determined by the PDAC. The Dean was also explicit about the requirement to articulate the differences between a proposed program and the Faculty's existing core masters degree program, emphasizing that a new program should not be created as competition to existing programs. This requirement, which was not a part of the academic plan statement but clearly an important element with stakeholders, is an example of the complexities of curriculum development and the need to understand both the internal and external political factors as well as the organization's culture and history.

3. *Influencing frameworks.*

As the PDAC consultant, I researched a variety of curriculum development frameworks to help plan the structure and process for the PDAC. Phase 1 of Diamond's (1989) curriculum development model formed the basis of the design process and provided extensive background information on a variety of topics related to curriculum design (e.g., essential conditions, basic competencies for student outcomes, external factors affecting
design outcomes, components of an objective). The work of Boyatzis et al. (1995) from Case Western Reserve's Weatherhead School of Management provided an example of best practice and outlined six lessons learned. Dressel (1971) identified examples of curriculum models used in higher education and proposed general considerations for curriculum development projects. Fisher and Levene (1989) presented five curricular patterns and outlined the characteristics, advantages, and disadvantages. (For further information on these frameworks, consult Chapter 2: Review of Related Literature. See Appendix A-4 for curriculum development reference materials distributed to the PDAC.)

**Phase 1 - define the curriculum project - outputs.** As a result of the activities in the project planning phase, the PDAC produced several documents used to guide the remaining phases of the design project. The PDAC goal and objectives framed the direction for the PDAC's work and identified the key research questions to be pursued before recommendations were generated. A curriculum development model developed for higher education was identified and introduced to the PDAC members as a guide to manage the design process. A project plan that identified milestones and key activities was developed in order to meet the time frame for generating the recommendations. And, a preliminary budget was proposed and modified throughout the course of the project in order to allocate resources as research plans developed.

1. **Goal and objectives.**

   The goal and objectives statement directed the PDAC's work, outlined a mandate for the members to follow, and provided a checklist to ensure that the Dean's requirements were met. The objectives parallel general components of curriculum development: understand the environment, profile the student outcomes, outline a course of programs, describe program logistics, recommend a teaching and learning style, and identify resources required to implement the curriculum proposal. Each objective was supplemented with questions that provided background on the objective's intent and framed the series of recommendations that would be required.

2. **Curriculum development model.**

   As noted earlier, a curriculum model had not been used in past development initiatives at the Faculty, and no model specific to information studies curriculum development was
known at the point of planning the PDAC project. However, the Dean recognized the need to identify a framework that would be used, at the very least, as a starting point to guide the process. I researched possible models and recommended Diamond's *Process for Educational Program Development*. At the initial meeting of the PDAC, I introduced background on the definition of curriculum plus an overview of the model, design considerations, and experiences of best practice in the form of lessons learned. Reference materials on these frameworks were included in the PDAC members' support documentation (see Appendix A-4).

3. **Project plan and milestones.**

Two levels of process or task documents were developed on the basis of the key activities identified in the goal and objectives statement and the curriculum development model. For the PDAC, the project milestones and estimated time frame were outlined in four phases -- planning, data gathering, data analysis, and recommendations -- with key activities assigned by months (see Appendix A-5). These general activities were further defined in a separate project plan for me as the PDAC consultant to provide a more detailed plan that would guide my work as the project facilitator. Although I did not apply the rigors of formal project management, the detailed outline of activities in the project plan, which corresponded with the PDAC's general milestones, provided a mechanism for evaluating the PDAC's progress, projecting resource needs, and managing expectations. I also used the project plan as a means of reporting the PDAC's progress and planning next steps with the Dean, including the allocation of budget resources.

4. **Budget.**

Funds from the provost's office had been allocated to explore program development as outlined in the Faculty's academic plan. A budget was created to ensure that these funds were maximized to facilitate PDAC activities. Because the PDAC operated within the administrative structure of the Faculty, many overhead costs (e.g., office space, computer equipment, telephone, supplies) were not applied to the PDAC budget. However, all costs for research activities (e.g., printing, photo copying, postage), conference attendance, and PDAC meetings were charged to the PDAC budget.
Phase 2 - design the solution to the curriculum problem. In Phase 2 of the design process model, the focus shifts from defining the curriculum problem and establishing the problem-solving environment to finding a solution to the curriculum problem. This phase comprises three key steps: identifying a range of possible solutions through research, choosing a direction for the solution, and defining the various elements of the solution (see Figure 6).

![Diagram](image)

**Figure 6. Phase 2 - Design the Solution**

The focus of this phase is to establish the curriculum design -- the blueprint of curriculum components. And as in Diamond's model, there is an emphasis on research, gathering evidence on which to base a solution to the curriculum problem.

During this phase, my proposed model takes a second divergence from Diamond's model. While Diamond's notion of thinking in the ideal is still the central approach, the
thinking is focused on first creating a range of possibilities for the curriculum’s direction, not for creating possibilities within an already selected direction. The necessity to explore possibilities is characteristic of a dilemma facing library and information science education. The continuous evolution of the discipline and related professions presents a range of opportunities for the curriculum direction in terms of prospective students, content focus, program structure, and teaching and learning approach. As a result, the curriculum design team first identifies possible directions for the program. Second, a series of choices are made as the team narrows the range of possibilities and selects a direction. And third, on the basis of the chosen direction, the components of a program are defined.

**Phase 2 - step 1 - identify possible directions.** While the caliber of the PDAC members was important to all phases of the design process, their range of experience and network of resources (i.e., people and material references) were crucial to their ability to identify possible directions for the new program. At the beginning of this step, the PDAC acted as key informants, providing ideas on the challenges in the information workplace, the competencies required by information professionals, and the educational needs of mid-career professionals. The Dean often remarked, “Think of designing a program that I’d be interested in taking.”

When designing the research plan, the PDAC members provided input on: participants -- visionary information professionals who were meeting the challenges of the evolving information environment; organizations -- examples of best practice in leading-edge information management; and existing programs -- approaches currently used in programs that would compete with the Faculty to provide educational opportunities to meet the complex needs of mid-career professionals (see Figure 7).
Phase 2 - step 1 - identify possible directions - actions. Once the curriculum problem and design project are defined, the design team begins to research possible directions. Because the emphasis at this stage is on researching options for the curriculum components, the activities parallel a standard research design of planning, gathering data, analyzing data, and presenting findings (see Appendix A-5). And because no case studies of similar projects could be found, research tools had to be developed.

1. Create research plan.

A basic research direction for the curriculum was identified in Phase 1 when the curriculum project was first defined. However, during Phase 2, the details of the research direction -- the who, what, and how of the research program -- were discussed and a formal research plan was developed. When planning the research program, the time frame that the
PDAC had in which to complete its objectives and the resources available for supporting the research efforts were a key consideration. The research plan established three broad categories for information gathering and analysis: the information and knowledge environment -- workplace challenges and directions; the information and knowledge management professional -- current and future challenges and competencies required; and designing a program -- the prospective student, the program structure and environment, and the teaching and learning approach. A series of primary research activities and research participants were planned.

2. **Design research tools.**

The PDAC's research plan incorporated a variety of research methodologies, each requiring a specific research tool appropriate to the type of participant and the nature of the particular research question. Each tool was designed to expand on the evidence to be collected in each research activity and to test validity -- a form of triangulation in order to verify findings across several groups of participants where the same core set of questions were posed. As the PDAC consultant, I created a core set of research questions that were modified to fit the particular study in the research program. The core questions were based on the components of the PDAC objectives and the elements of curriculum design: trends in the information environment -- the challenges and solutions in organizations; competencies required by information professionals and the gap that exists -- the knowledge base, skills, and attitudes required; and aspects of the learning environment -- the approach and structure that would appeal to prospective students.

Four research tools were created: an e-mail survey for key informants, a discussion guide for a focus group, an interview script for key informants, and a paper and web-based survey for mid-career alumni (see Appendix A-6). The e-mail survey, interview script, and discussion questions were field tested with selected PDAC members. The alumni survey followed the rigors of survey design and was field tested with a panel of experts outside of the PDAC.

3. **Gather data.**

Key informant focus groups, key informant interviews, survey questionnaires, and site visits were the main strategies of the PDAC's research program. A variety of media were used for gathering the data. For example, I designed an e-mail survey to key informants based on
the core questions for the key informant focus group discussion and made the alumni survey available in paper and on the World Wide Web. In exploring the challenges facing information professionals, the PDAC felt that it was necessary to provide the research participants with options for using various computer technologies -- not only to facilitate the gathering and analysis of the data but to represent the Faculty's ability to use technology as an enabling tool. The data were gathered for the research program over a period of 7 months.

4. **Analyze data.**

Once gathered, the data were analyzed by a coding scheme that sought to identify: issues arising from knowledge and information management challenges in the work place, competencies required by information professionals, program design features required in an adult learning environment, and characteristics of the prospective student (see Appendix A-7). The analysis of these key components and their corresponding subcategories provided the PDAC members with the information necessary to make decisions on the various curriculum design components. As the PDAC consultant and in an effort to standardize the approach to analysis, I was responsible for analyzing all of the data collected.

5. **Present findings.**

As each research activity (i.e., key informant interview, email survey response) was completed, the PDAC members were given an analysis of the data from that particular activity. When all activities within a given research study were completed (e.g., all e-mail surveys from industry key informants, all surveys from mid-career alumni), a synthesis of the data was generated. This approach gave the PDAC members both the data analysis from an individual response and a synthesis of the larger picture across all participants in a given research activity. An exception to this data synthesis across a research project was the best-practice site visits. I prepared a separate analysis of each program due to the unique characteristics of these organizations' information and knowledge services.

The data analysis was distributed via the PDAC listserv, which made the information more readily available between meetings. At each PDAC meeting, the data analysis for research activities completed between meetings was reviewed and used to further the discussion regarding program design components and ultimately to create the series of recommendations. Research findings were heavily referenced throughout the PDAC's Report.
of Recommendations and selected research summaries were included as support material in the report's appendices (see Appendix A-8).

Phase 2 - step 1 - identify possible directions - inputs. The beginning of the research program phase relied heavily on a wide range of inputs in a variety of formats. Information from journal articles, books, conference presentations, and discussions on issues such as society's information and knowledge requirements, the evolving discipline of information science, the changing role of information professionals, and the competencies required, as well as the trends in professional and LIS education, were used to plan the research activities. For the Report of Recommendations, I compiled an extensive list of references used as inputs throughout the project (see Appendix A-9). The majority of the cited materials were used at this phase of the curriculum design process in order to shape the PDAC's research program focus.

Phase 2 - step 1 - identify possible directions - outputs. From PDAC discussions and the analysis of PDAC research data, I produced working documents and concept or position papers for discussion by the PDAC members on possible directions for the new program. These documents, considered as outputs in the proposed model, were used to create the final recommendations for program development. Many of these working documents were first drafted at this phase and continued to be revised throughout the remainder of the design process until the program solution was formulated. The research tools form another type of output from this stage and provide a record of the research approach and methods used in the PDAC research program to gather the evidence that guided the decision-making process.

1. Working documents.

The PDAC adopted the approach of creating working documents that were revised as the research identified more possibilities for a new program's direction, content, and structure. For example, as the research participants provided ideas and opinions on who the prospective student might be, the list expanded to reflect the total range of these possibilities. These documents recorded the outcomes of Diamond's approach to thinking in the ideal in order to identify the widest range of ideas possible. Key working documents included: The Student/Participant Profile, The Program Design Component Considerations, The Faculty
Portfolio of Programs — Directions and Differences Between the MISI Degree Program and
the New Curriculum, The Faculty Program Portfolio, and The Institute Planning Proposal
(see Appendix A-10 for an example of the evolution of one of the PDAC’s working
documents, Curriculum Design Components).

2. Concept or position papers.

The PDAC found early in the curriculum design process that there was a need to
articulate a position or define a concept in order to clarify meaning and intent or to provide
a rationale for a committee decision -- an illustration of the PDAC’s need to create meaning.
For example, the PDAC identified the area of knowledge management as a possible content
direction. Given that knowledge management is a relatively new concept in information
studies and that other disciplines have used the term as part of their discourse, the PDAC
believed it was necessary to draft a position paper that would explain how the PDAC
interpreted the concept of knowledge management. However, the most important position
paper and the one that required the most work throughout the design process was the
Program Distinctions document. This position paper was a crucial resource to use with
stakeholders in order to address political concerns regarding the new program (see Appendix
A-11).

3. Research tools.

As noted earlier, the PDAC’s research tools were designed to work both
independently and collectively -- to focus on a particular group of research participants yet
provide information on the core questions identified in the curriculum problem and presented
throughout the PDAC’s research program. While the tools were primarily intended as a
means of gathering information, they also became a means of providing information to the
research participants who represented several stakeholder groups. For example, the
introductory statement of an email survey or the covering letter of a questionnaire provided
the participant with information on the Faculty’s collaborative development approach and
commitment to providing excellence in educational opportunities -- a public relations effort
that was well received by the participants and, in fact, encouraged their involvement in the
research study (see Appendix A-6).
**Phase 2 - step 2 - select direction.** The tendency in a research project is to continue to gather information as long as possible. Each research participant provides another path to explore, another expert to approach, or another idea to expand the range of possibilities. However, the PDAC was operating within a given time frame and recommendations were yet to be formulated. By the end of the sixth month, when the PDAC had compiled a wide range of data on possible directions, the PDAC Chair commented, "We have lots of information. Let's formalize the direction." In this case, the direction identified was not only a content designation, it also included an outline of the prospective student's characteristics and the proposed structure of the learning environment (see Figure 8).

![Diagram of Aims and Responsibilities of Professional Education]

**Figure 8. Phase 2 - Step 2 - Select Direction**

**Phase 2 - step 2 - select direction - actions.** Conrad and Pratt (1993) present a model for making decisions about curriculum that attempts to portray the multilevel
interactions between the curriculum *deciders* and the curricular design variables, environmental inputs, and outcome variables. A cycling of information evaluation and consensus building by various individuals and groups responsible for the curriculum decision continues until a design is generated. The actions of the PDAC in selecting a direction parallel this model in that decisions were made on the basis of curriculum variables (i.e., curriculum design components), environmental inputs (i.e., issues regarding society’s and organizations’ information needs), and outcomes (i.e., competencies needed by information professionals).

The solution to the curriculum problem is created by first defining a direction and then establishing a general goal for the program. These actions rely heavily on further review of the research findings. An additional element addressed at this phase, which was related to one of the Dean’s directives, was the need to distinguish a proposed program from the existing programs offered by the Faculty. The working document *Program Distinctions* was drafted earlier in the PDAC’s design process. However, once the development direction was selected, the distinctions were developed further and finalized in the last step of Phase 2.

1. *Define a direction for the solution.*

   For the PDAC, the direction was defined in terms of the prospective student (i.e., three general groups defined by their job function, education and experience, and objectives for pursuing further education), the content area (i.e., the principles and concepts of knowledge management), and a structure (i.e., modular, case-based learning approach with a variety of credentials available to the student). This definition of direction provided the background required in order to establish a general recommendation from which specific recommendations would be generated.

2. *Establish general goal for the program.*

   The goal for the program design direction formed the basis for the recommendations established during the next phase of the model. This goal outlined the various components of the design solution, but also introduced a new element. While the curriculum problem sought a program definition, the general goal expanded the concept of *program* to a *portfolio of programs*. The rationale for this decision was that, given the diverse range of needs identified by the three categories of information professionals, no single degree program could satisfy all prospective student requirements or opportunities for the Faculty. A portfolio of programs
would include continuing education opportunities, a certificate program, a postgraduate diploma program, and an executive masters degree program (see Appendix A-12).

3. **Distinguish the proposed program from existing programs.**

The PDAC members were cognizant of the need to distinguish a new program from the Faculty's core masters degree program. Members of the Faculty were concerned that any new program developed should strengthen the existing program, not detract or compete. Faculty members were also concerned about establishing an elitist program, one where significant resources would create an imbalance in learning environments between the existing and the new programs. Once the program direction for the new curriculum was outlined, the PDAC began to develop a position paper that articulated the differences and illustrated the synergies between current offerings and the proposed portfolio of programs. This document illustrates the need to be aware of and address political issues that influence curriculum design (see Appendix A-11).

**Phase 2 - step 2 - select direction - inputs.** In addition to the inputs from the previous step in the process model (i.e., society's information and knowledge requirements, the evolving discipline of information science, the changing role of information professionals and the competencies required, and trends in professional and LIS education), the PDAC reviewed the findings of the research activities with attention to the gap between the competencies required to meet an organization's information challenges (identified by information industry employers) and a summary of the existing competencies held by information professionals (identified by the information professionals). Data analysis from four of the most significant research projects is included in Appendix A-8 as a sample of the type of documents that the PDAC was considering as inputs during this key decision-making phase. However, the primary input at this stage was the expert opinion of the PDAC members. As decision makers, the PDAC members' collective analytical abilities, intuition, and wisdom were a significant resource for creating the solution to the curriculum problem.

**Phase 2 - step 2 - select direction - outputs.** The majority of outputs from this step are in the form of first or early drafts of working documents that formed the basis of creating
the final program definition in the next step. During this step, the idea for an institute as a *proof-of-concept* was first discussed and a preliminary outline of elements proposed.

**Phase 2 - step 3 - define program.** Once the general direction (i.e., prospective student, program content, and program structure) is selected, details of the various program design components are established. This step represents the culmination of research, synthesis, and evaluation -- the point at which the PDAC formulated the recommendations and began planning the final report (see Figure 9). The PDAC completed the last two steps of Phase 2 in a short period of time. The decision regarding the direction for the primary recommendation and an outline of the program characteristics, which formed the majority of the supporting recommendations, were completed at the same meeting. The distinguishing element between these two steps is the action that moved the process ahead -- selecting the direction then defining the program based on the chosen direction -- not the span of time in between the two actions.

![Diagram](image_url)

*Figure 9. Phase 2 - Step 3 - Define Program*
Phase 2 - step 3 - define program - actions. Defining the program brought the PDAC to the phase that Diamond calls *adjusting to the real*. Serious consideration of creating a program that would have a high likelihood of success, gain acceptance by the stakeholders, and could, in fact, *be* implemented was of primary concern to the PDAC. However, adjusting to the real did not mean abandoning the ideal. The fourth meeting of the PDAC, where decisions on the recommendations were finalized, began with a review of two recent articles, one in a national newspaper, the other in the Canadian Library Association's journal. These articles outlined the need for organizations to set *outrageous goals*. And Boyatzis et al.'s fourth lesson, *challenge convention and tradition*, was emphasized.

During this step, five key actions were completed. Details of the curriculum components were outlined. The series of recommendations were finalized. Program distinctions were refined. An approach for the business case was identified. And a method of testing the curriculum design was proposed. The documents that resulted from these actions formed the basis of the PDAC's final report.

1. *Outline curriculum components.*

Throughout the PDAC process, identifying possible directions for various curriculum components was a key activity, and the working document on curriculum components continued to expand as new possibilities were identified. At this point in the design process, the PDAC made decisions based on the research findings and their own opinions about the recommended direction for each of the various curriculum components. The components were organized in four categories: prospective student and corresponding educational objectives; curriculum content focus; learning objectives; and program structure (e.g., pedagogical approach, format, student evaluation, credentials).

2. *Finalize recommendations.*

Based on the research findings and discussions of the PDAC, a series of recommendations were written. Each recommendation consisted of two parts, a statement outlining the recommendation and a rationale for making the statement. In order to provide a starting point for choosing the program direction, I proposed a general recommendation on which specific recommendations would be based. This general recommendation was based on my analysis of the research data and my opinion on the general consensus that was building among the PDAC members. I reviewed the draft of the general recommendation with the
PDAC Chair and then distributed it to the PDAC members for discussion. In presenting the draft, I provided the PDAC with three options on the wording of the general recommendation. The basic intent or direction did not differ among the options. Instead, the emphasis, as represented by choice of wording, and location in the paragraph, varied (see Appendix A-12). In the draft, key words were identified in bold in order to focus the PDAC’s attention on the messages within the recommendation (e.g., analysis of evidence, begins, portfolio of programs, senior managers). At the final meeting, the PDAC members discussed each recommendation, reached consensus on direction, and proposed wording to ensure that intent and meaning were clearly stated.

When discussing the proposed recommendations, the PDAC members were unanimous about the chosen direction. The themes that emerged from the research findings were clear. The challenge to the PDAC was not in recommending a particular direction, but in presenting a valid case for quickly moving ahead on the recommendations. Thus, the recommendations needed to reflect a purposeful, clear direction; the wording had to be direct and strong to show commitment; and the vastness of the opportunities needed to be emphasized. In addition, the PDAC wanted to show that they were cognizant of their responsibilities in choosing the direction, a direction that might be interpreted as being beyond the capabilities of the Faculty. In other words, the PDAC wanted to show an understanding of the limitations of the real world, but to excite the stakeholders with the depth and breadth of opportunities to grow the Faculty in both direction and size. The recommendations were prefaced with a statement outlining the Faculty’s current strengths and the way that future program development would build on these strengths (see Appendix A-13).

3. Refine program distinctions.

Work on this document began in the previous step when the program direction was selected. The PDAC paid particular attention to the development of this document, which in its first draft, sought to define differences among programs using a definition of information with three distinct components (see Chapter 2: Review of Related Literature for further information on Buckland, 1991). A parallel was drawn in that existing programs reflected one aspect of information -- information as object. The new program would be based on the third aspect of information -- information as process. The program distinctions document grew in scope through seven drafts over 3 months. In the end, Fundamental Direction became The
Faculty Portfolio of Programs: Directions and Differences Between the MISI Degree Program and the New Curriculum. The expanded title is reflective of the expanded content. This document was included in its entirety in the PDAC's final report (see Appendix A-11).

4. **Identify business case components.**

A business case for the proposed portfolio of programs (i.e., a plan that helps determine the feasibility of pursuing the creation of a new venture) was necessary for two reasons. First, the PDAC was recommending a direction that represented significant change from existing programs in all aspects of the curriculum design and would require substantial resources to develop and implement. The direction would have to be *sold* to the stakeholders through an explanation of opportunities, risks, and benefits -- key components of a business case. Second, the Faculty's academic plan included a directive that the new program would be self-supporting within 3 years. A financial model would have to be included to estimate the revenue and expenses expected in order to meet the self-supporting requirement. Building a business case to support the PDAC's program recommendations would provide the Dean with additional information necessary to state the case in order to secure governance support and funding for further program development.

In addition to planning purposes, a business case could also be used for evaluation purposes as a test of the stated objectives, theories, and calculations that were proposed in the design and planning phases. It could also help identify areas that needed to be modified. Given the magnitude of the PDAC recommendations, implementation would take a considerable period of time. A business case would provide the curriculum implementors and subsequent evaluators with background on the design focus and program intent. It would also provide the *snap-shot-in-time* necessary to understand the environment that existed when PDAC decisions were made and the assumptions on which the PDAC made its recommendations (see Appendix A-14).

5. **Develop method to test the proposed program design.**

Most curriculum development models conclude with some form of an evaluation process. For example, Tyler's Rationale ends with the question "How to determine whether purposes are attained?" The final step in Taba's model is to determine "what and how to evaluate" (Posner, 1988, p. 89). And Diamond concludes the second phase of his model with
"implement, evaluate, and revise" (see Appendix B-1). The PDAC’s design process included an evaluation action prior to actual implementation of the proposed curriculum.

Throughout the process, PDAC members discussed a concern regarding the amount of time and resources required to develop a new curriculum and the responsibility to design a direction that was focused on the future, not just the present. The idea of testing the PDAC recommendations before committing resources to implement the full portfolio of programs developed into an outline of an institute. The test, in the form of a proof-of-concept, would: evaluate the three primary components (i.e., audience, content, structure) identified for the portfolio of programs; create awareness of the Faculty’s development direction; and build support for the proposed direction from the stakeholders, which assumed a successful venture. Another group of information professionals, including a subset of the PDAC, met to discuss the idea of an institute based on the program components outlined by the PDAC. They also provided ideas on developing the institute and identifying sponsorship from the private and public sectors (see Appendix A-15).

**Phase 2 - step 3 - define program - inputs.** Once again, the research findings, PDAC member opinions, and drafts of working documents were key inputs for the PDAC’s consideration of program design components and recommendations. However, the focus on the real at this phase of the design process meant that further information on the amount of resources required, types of university program models available, the process of working through governance structures, and other implementation issues was necessary in order to create the business case. Further information was also required on educational opportunities that may already exist -- competitive intelligence to be used to position the strengths and benefits of the Faculty’s proposed portfolio of programs.

1. **Resources.**

Understanding the resource requirements meant further research into statistics on space allocations, materials resources (e.g., equipment, library resources, supplies), and staffing ratios and costs. Resources consulted included: statistics compiled by ALISE regarding LIS programs across North America, the Faculty’s current budget, and budgets for other university executive programs. Home pages, program catalogues, and marketing information from various LIS faculties including degrees, certificates, and continuing
education programs were also consulted to identify program features, costs, and structures (see Appendix A-16).

2. *University models and governance structures.*

The administrative handbook from the university’s school of graduate studies was a source of information on the types of programs (i.e., masters degrees, collaborative programs, and centres and institutes) and the procedures for proposing new programs. The provincial government’s council of graduate studies provided guidelines for governance and degree program development procedures. These requirements were crucial to understanding the process for further curriculum development. The design phase must consider next steps in building the foundation for a new program by ensuring that the proposed curriculum could be implemented.


I consulted several references for writing business cases in order to identify the components to include in the PDAC’s final report of recommendations. My previous experience in business as the Manager of Business Development for an information industry company included writing business cases for new product and service offerings. However, I was not sure what elements might best further the case for establishing a new program at the Faculty -- which of the standard business case elements would be required in order to state the Faculty’s case. In addition to business references, I obtained a recent business case for creating a continuing education facility at another Canadian university. This business case provided input on points to include in the case from the perspective of a university’s requirements.

Since the business case was embedded in the PDAC’s *Report of Recommendations*, it did not contain the full range of sections that would normally support a *stand-alone* document. The elements chosen for the PDAC business case are discussed in the following section.

**Phase 2 - step 3 - define program - outputs.** As noted earlier, the PDAC’s working documents were continuously developed throughout the various phases and steps of the design process model. However, during this step, the working documents were finalized and formed the basis for writing the PDAC’s final report.
1. **Curriculum components.**

   This document was drafted in Step 1 of Phase 2, *Select Direction*, when research findings and PDAC member opinion began to provide possible directions for consideration by the PDAC. In its final form, the document outlined the PDAC’s choices for the four basic curriculum components:

   a. *Prospective student* -- three groups of professionals defined by their job focus, educational background, and objective for obtaining further education.

   b. *Curriculum focus* -- a convergence of three streams: information management, organizational management, and knowledge management, with recommended subtopics for each category.

   c. *Program learning objectives* -- four general objectives for competencies that students should obtain from the program.

   d. *Program structure* -- recommendations on format, pedagogical approach, program delivery, student evaluation, program credentials, faculty, program partnerships, research activities, and financial models.

2. **Recommendations.**

   The list of recommendations with rationale statements was arranged from a broad, general direction to specific, detailed recommendations on various components of the program’s design. The development of the solution to the curriculum design problem followed Toombs and Tierney’s (1995) concept of design (i.e., content, context, and form) and ensured that the original objectives stated for the PDAC’s project were met.

   The general recommendation was a summary statement that outlined the direction for program development and provided a framework for the specific recommendations. It broadly outlined the elements of the program direction: the audience, the content area, the programmatic structure and teaching approach, the goal, and the context. The specific recommendations provided further detail on the various components of the recommended program framework. Four drafts of the list of recommendations were written over 1 month of intensive review. The substantive changes in the working document’s content provide a record of the process used to develop the ideas, with an emphasis on clarifying intent, particularly through expanding the rationale. A brief summary of the specific recommendations follows:
a. **Program structure -- a portfolio of programs:** the need to provide a variety of educational opportunities to meet the educational objectives of a range of information professionals.

b. **Program goals:** to provide learning opportunities to increase competencies in the ability to manage information; to contribute to the development of the field of knowledge management; to expand the Faculty's expertise in the information continuum; to provide leadership in policy and practice for responsible use of knowledge in organizations; to provide life-long learning opportunities to meet changes in the knowledge environment; and to increase cooperative ventures with government, industry, public sector, and related professions converging to meet the challenges of a knowledge-based economy.

c. **Audience:** three groups of prospective students (i.e., information professionals, information systems/information technology professionals, and management professionals) with a common goal (i.e., the effective creation, management, and use of information and knowledge) but unique learning objectives.

d. **Learning outcomes:** knowledge of the evolving information technology and knowledge management environment within an organization's design; knowledge of the creation, management, and use of information and knowledge as strategic processes within an organization; ability to design and implement knowledge management strategies in order to facilitate the effective use of knowledge; and development of management and leadership skills.

e. **Content:** three subject streams: information management, organizational management, and knowledge management.

f. **Program structure -- course format** (i.e., modular, flexible combination of intensive sessions, workshops, institutes and seminars, and an executive masters degree program format); pedagogical approach (see Fisher and Levene, 1989) *broad-fields* -- the relating concepts from various disciplined, *problem-oriented* -- practical problems solved after learning facts and
concepts to use as tools, and competency-based -- ability to generalize learned skills, abilities, attitudes, and values as defined; program delivery (i.e., combination of onsite classes and distanced education options); applicant qualifications (i.e., combination of previous education and professional experience); and student evaluation (i.e., a combination of group and class discussion participation, application exercises, presentations, term papers or essays, research studies, projects or case studies, tests or exams, and self-evaluation).

g. Credentials -- continuing education credits, Certificate in Knowledge Management, Post-Graduate Diploma in Knowledge Management, and an Executive Masters Degree in Knowledge Management.

h. Teaching staff -- a variety of professionals with expertise in the principles and concepts of information and knowledge management; faculty members, adjunct professors, faculty from other university departments; and expert practitioners.

i. Strategic partnerships -- collaboration with various faculties, industry sectors, and public organizations as appropriate to the particular program content focus.

j. Research focus -- continued contribution to the development of theory and practice concerning the principles and concepts of knowledge management.

k. Financial models -- a combination of student tuition, industry sponsorships, foundation or government grants, and university funds.

l. Proof-of-concept -- validation of the direction (i.e., audience, content, approach) by creating an institute program based on the curriculum components recommended for the portfolio of programs.

3. Program distinctions.

To distinguish the new and existing programs, this Program Distinctions document began with an overview of the current programs available at the Faculty, followed by the Faculty’s mission statement and goals. The existing core masters program was then described in terms of goals, program content focus, audience, and program structure. An outline of the proposed new program was also defined by the same categories. The document concluded
with a chart, a representation that visually portrayed the program distinctions in five elements and the corresponding features of the two programs (see Appendix A-11).

4. **Business case outline.**

The business case expanded on the rationale statements prepared for the recommendations by supplying support information on the opportunities, risks, and benefits based on findings from the PDAC’s research program. Because the business case was a section of the *Report of Recommendations*, all elements found in a typical business case were not included. However, one could argue that the *Report of Recommendations* was a business case itself. The elements selected for inclusion were:

a. *Opportunity analysis* -- an outline of the program opportunities and key benefits.

b. *Market analysis* -- an overview of the target markets for potential students and a competitive analysis of similar educational opportunities available.

c. *Programs design* -- an overview of how the portfolio of programs might fit into the Faculty’s structure, a list of options for the organizational and governance structure of the degree program, a range of possible strategic partnerships, and a section outlining the critical success factors in program vision development and program development and implementation.

d. *Program distinctions* -- a discussion of the differences between the existing programs and the proposed portfolio of programs.

e. *Proof-of-concept* -- an outline of the components for a continuing education institute to test the curriculum direction, target market, and learning environment.

f. *Financial analysis* -- an outline of revenues and costs for the proof-of-concept initiative and a 3-year estimate of costs for the executive masters degree program.

g. *Implementation plan* -- an outline of key activities for planning a continuing education institute, building stakeholder support of the program vision, and developing the portfolio of program curriculum.
h. Communication plan — an overview of general communication objectives, key messages, and target audiences with corresponding communication strategies for the continuing education institute.

5. Definitions.

As the PDAC worked through the various possibilities for the program direction and its components, discussion often centred on word and phrase meanings. Given that the program direction represented a convergence of disciplines, the vocabulary representing the proposed direction often needed clarification. A list of definitions was generated and served as a reference guide to PDAC discussions. The definitions were later included in the final report to ensure that word use was standardized and meanings were clear to the readers (see Appendix A-17).

6. Institute outline.

The ideas for an institute developed in a manner similar to that of other working documents — general ideas were proposed and developed into comprehensive outlines of directions, components, and approaches. The institute outline included: a working title and tag line; a theme and topics to be presented; the purpose and program objectives; the intended learning objectives, target audience, and perceived benefits gained from attending; an overview of the institute structure and facilities; resources required; and costs and funding approaches (see Appendix A-14).

Phase 3 - present the solution. Diamond’s (1989) model does not include a step for presenting the information developed in the project design phase. Given that the PDAC’s mandate was to prepare recommendations on a program direction and its design, presenting the recommendations was an important step in fulfilling the PDAC’s objectives (see Figure 10). While the PDAC was involved in only one level of presentation, the writing of the Report of Recommendations for the Dean, the PDAC understood that the recommendations would be presented to faculty members, Faculty council, alumni, and other stakeholders. Once endorsement or revision was completed, the recommendations would form part of the Faculty’s next academic plan and be presented to the university’s provost. The information in the final report would also be summarized in different formats as follow-up for the PDAC
research participants and information to various groups such as the Dean’s Advisory Board and members of ALISE.

Figure 10. Phase 3 - Present the Solution

Phase 3 - present the solution - actions. Once the recommendations were finalized, the PDAC prepared to package and present the information. Four key actions were completed at this phase: identify the final report’s audience, clarify the purpose of the report, select components for the report outline, and write the report.

1. Audience.

The PDAC members were aware that the report would first be tabled with the Dean, but that the report’s content would be used in a variety of situations with a variety of audiences. At the final working committee meeting, the PDAC members discussed the components of the report and the need to provide sufficient background information to support the recommendations in language that would present a strong, positive case with a
clear definition of intent. The introduction of the report included a statement about the intended audiences for the report and suggested that sections of the report be used as separate entities when appropriate.

2. **Purpose.**

The final report was written to fulfill four objectives: to outline a series of recommendations, to build a case for action on the recommendations, to establish a foundation for the development of the curriculum, and to provide a record of the curriculum design process. While the PDAC was involved in only one level of presentation, the writing of the *Report of Recommendations* for the Dean, the report was prepared with the intent that it be used either in whole or in part as the basis for subsequent presentations when the recommendations began to move through the Faculty's and the university's governance structures.

3. **Report components.**

The first draft of the report outline was written early in the PDAC process as a guideline for the research program. The ninth and final draft was written only days before the completion of the final report and more accurately reflects the key messages contained within the recommendations. Section 1 contained the executive summary, recommendations, rationale, and business case. Section 2 focused on the curriculum design process, including an overview of the frameworks and reference sources used to plan and implement the design process, the list of program design components used to formulate the recommendations, and a summary of issues resulting from the design process that were unique to the PDAC work --- elements not addressed in any of the reference frameworks. Section 2 also included a summary of reflections on the design process from the PDAC Chair, PDAC consultant, and a number of the PDAC members.

4. **Report writing process.**

On the basis of the working documents finalized in the previous phase of this proposed model and a discussion of the report content, audience, and purpose, I drafted the report and submitted it to the PDAC Chair and the Dean for comment. In a final subcommittee meeting, the report was discussed and recommendations for revisions were made. The only substantive revision was to strengthen the general rationale for the direction of the recommendations. Specifically, revisions were made to: highlight the Faculty's
leadership role -- why the Faculty is best suited to be the focal point at the university for the knowledge management content direction; position the proposed curriculum design as the next logical step in the evolution of the Faculty -- the continued growth of a leading LIS school; and answer two fundamental questions -- why knowledge management and why the Faculty among other LIS schools, within the university, and across the identified disciplines.

**Phase 3 - present the solution - inputs.** The final report was based on all of the inputs identified in the preceding steps of the design process model. Specifically, the working documents, the concept and position papers, and the research findings formed the foundation for the report’s text. Materials on report writing, examples of business cases, and overviews of other curriculum design projects were used as references. The draft report outline functioned as the project plan/checklist to ensure that all components were included.

**Phase 3 - present the solution - outputs.** *The Report of Recommendations* was the final product of the PDAC. The report comprised two sections. Section 1 -- *Recommendations of the Program Development Advisory Committee* -- included an executive summary, an outline of the curriculum development process, an analysis of information gathered, the recommendations for program directions, the business plan, and the summary. Section 2 -- *The Curriculum Development Process* -- included an outline of the elements of the curriculum design process, a list of the program design components including drafts one and seven to highlight the progression, an outline of the elements not represented in any of the influencing frameworks used to guide the PDAC’s process, and reflections on the curriculum design process by the PDAC Chair, the PDAC members, and the PDAC consultant.

The final report concluded with an extensive appendix that provided background information in support of the recommendations, further explained the intent, and clarified meaning. The appendix also included several drafts of key documents to show the progression of thought and the decision-making process used as working documents were revised and finalized. Sections of the appendix included: data gathering -- the research activities, tools, and participants; data analysis -- the coding key and summary analysis of evidence from seven PDAC research activities; competitive analysis -- information on Canadian LIS graduate
programs, related professional programs in Ontario, institutes for information professionals, a rating of executive education providers, and selected web site addresses; program organization and design -- an outline of the structure of the portfolio of programs and governance information; and support information -- definitions, the Faculty's development/change time line, principles of knowledge management, and list of selected references.

The final report was packaged in three formats: a coil-bound volume with colored paper to denote section divisions for PDAC members and the Dean; a plain-white copy for the Dean's office to be used as a master for further reproduction; and a computer file on diskette for the Dean to use in the preparation of subsequent presentations.

The Table of Contents and Executive Summary of the PDAC's Report of Recommendations, edited to protect the anonymity of this case study's subject, is included in Appendix A-3.

**The Proposed Design Process Model's Influencing Factors**

In addition to the five main processes of the curriculum design process model, I identified two factors that influenced decision-making throughout the design project. The first factor is similar in construct to the concept of *inputs*, information that informs the process. Given the Faculty's focus on preparing information professionals, the aims and responsibilities of professional education influenced decisions at every stage of the design process.

The second factor parallels an action or approach rather than an input and influenced the output produced at each stage of the design process. During the entire curriculum design project, the PDAC sought to create meaning, to use terminology and concepts that clarified intent and facilitated understanding. These two elements, identified in the proposed model as *Influencing Factors*, are positioned above and below the key processes representing their applicability to each phase and step in the proposed curriculum design process model (see Figure 4). Once again, the two-dimensional diagram limits representation of the cycling effect where elements continuously interact with processes.

**Factor 1 - The responsibilities of professional education.** Chapter 2: Review of Related Literature includes a section on the aims and responsibilities of professional
education. I did not formally introduce this topic to the PDAC simply because I was not aware of its importance to the design process until PDAC meetings progressed and I completed the data analysis of this case study. However, there was no question that all PDAC members were strongly committed to designing a curriculum that would build on the strengths and expand the opportunities for a wide range of information professionals, particularly librarians -- the professional focus of several of the PDAC members. Discussions of the responsibilities of professional education did not always conclude with answers. Questions remained as to how the proposed curriculum would satisfy the needs of such a diverse group of professionals. And, the issue of expanding information studies outside of the more traditional professional roles was often discussed in terms of a need for librarians to reposition their competencies.

My analysis of the case study data identified five elements of professional responsibility that influenced PDAC discussion at multiple points in the curriculum design process. The roles and responsibilities of professional education became a significant influence on the choices that the PDAC made regarding curriculum component directions.

1. *Expanding current professional role.*

The curriculum problem set the direction for designing a program centered around a new content focus. This content direction would support the teaching of required competencies and expand the current role of information professionals in order to meet present and future challenges in information and knowledge management. The following opportunities for this new direction were explored: moving the profession *upstream* to become involved in the design and creation of information at the pre-production or pre-process phase of the *Information Continuum*; involving information professionals as key members of an organization's decision-making management team, not as support staff; identifying areas where an information professional's core competencies would support knowledge management initiatives beyond the library facility; developing a multidisciplinary approach to information studies, with emphasis on the management competencies necessary to support the goals of an organization; and creating value to an organization through information creation and use, not merely information access and delivery.
2. *Continuous learning.*

The PDAC’s alumni survey showed that 100% of the respondents had participated in some form of continuing education activity since graduation, and over 80% of the respondents held at least one graduate degree in addition to their Masters of Library Science. The issue for the PDAC was not the need to encourage a commitment to continuing education, but the need to provide a comprehensive range of choices to satisfy the high demand and wide variety of interests and demands. In the PDAC’s design of the proposed portfolio of programs, continuing education opportunities (e.g., workshops, seminars, institutes, certificates) formed a primary element of the program offering.


The time frame for designing and implementing a new graduate degree program is estimated at 3 to 5 years. A challenge for the PDAC was designing a program that would remain relevant in an evolving discipline by the end of the curriculum planning, approval, and implementation phases. Without appropriate planning, a proposed content focus could be eclipsed before it was even implemented. The first challenge was not only to *stay ahead of the wave* of change in the field of information and knowledge management but to *anticipate* the changes that would occur during the curriculum development process. At the same time, the PDAC identified a need to educate professionals who would be leaders -- proactive participants in the information and knowledge economy, not static reactionaries to information demands. A second focus for preparing for the future was creating a program that would increase the leadership and change management competencies of information professionals in *anticipation* of future needs, not simply in response to the challenges in the current information environment.

4. *Accreditation.*

For most sectors of information professionals, no certification or exams are required in order to practice as required by other professions such as law and medicine. The information professional’s abilities are evaluated on many dimensions, formal education being one. Accreditation becomes the *seal of approval* that the professional has obtained his or her professional training from a reliable institution of higher education. However, accreditation is obtained by the professional program, not the individual student. In the case of library and information studies programs, The American Library Association (ALA) is the accrediting
body. Evaluating competent professionals in a field where no certification or external examinations are required increases the importance of the type of degree and the school from which the degree was obtained. For example, many library-related jobs in North America require a degree from an ALA-accredited school.

The PDAC discussed two questions central to accreditation -- the issue of ensuring that competent professionals are educated by a particular program. First, how would the Faculty establish credibility for and acceptance of a new degree? Given the expanded markets for students (i.e., the information technology, information systems, and management sectors of professionals), would ALA be the best source for this endorsement? What does ALA mean to people outside of the library community? And second, how would the new degree compete with existing degree programs, especially a Masters or Executive Masters of Business Administration? Would professionals from other fields of study recognize that the field of information studies had anything to offer them? Would employers recognize the benefits of an Executive Masters in Knowledge Management as offered through a faculty of information studies?

A third issue that the PDAC did not discuss, which is discussed in the current library and information science literature, is the appropriateness of obtaining ALA accreditation for a degree program that some information professionals believe is outside the mandate and expertise of a library-focused professional association. As noted above, what significance does ALA accreditation have outside of the library community? How could ALA’s credibility as an accrediting body be established?

5. Application qualifications.

Given that the portfolio of programs was designed for a mid-career professional and one program stream was an executive masters degree, program admission qualifications were more complex than for the Faculty’s existing programs. The PDAC recommended that a process be designed to evaluate an applicant’s previous education and professional experience combined with the applicant’s current work challenges, thus ensuring that the applicant would be able to function at an advanced level as well as contribute to the team-based, problem-solving learning approaches used in the programs. A precedent had been set for admissions qualifications to executive masters degrees by the university’s faculty of management.
**Factor 2 - The process of creating meaning.** The second influencing factor in the design process model relates directly to the knowledge management content focus proposed by the PDAC. "What do we mean by that?" was a question constantly posed during the discussion of ideas and the review of working documents. As the PDAC explored new directions for the curriculum, the meaning of terms, phrases, and concepts associated with the proposed direction was continually discussed and attempts were made to clarify definitions. Given the evolving nature of information studies, the convergence of ideas from other disciplines, and the range of professions identified as potential students, stating recommendations in language that would be clearly understood and not misinterpreted was a significant challenge for the PDAC.

Once the PDAC selected the field of knowledge management as the content direction for the new program, the PDAC Chair suggested that the committee apply the principles of knowledge management to the Faculty's curriculum problem. One model discussed as a possible framework for the institute where the proposed curriculum could be evaluated was Choo's (1998) *Knowing Cycle*, an interaction of sense-making, knowledge creating, and decision-making that facilitates organizational learning. Sense-making (i.e., the ability to construct meaning) helps establish a shared meaning among the members of an organization in order to clarify issues and create a common ground for making decisions. "A framework of shared meanings and purpose is therefore used by organizational members to assess consequentiality and appropriateness, and to reduce information ambiguity and uncertainty to a level that enables dialogue, choice, and action making" (pp. 240-241).

I have synthesized the PDAC's efforts to create meaning into six categories.

1. **Definition.**

Early in the PDAC's research program, the need to establish definitions for terms was recognized. This reference list was used not only to illustrate word meaning but also to standardize the use of certain terms (e.g., information practices, knowledge management process, organizational design, resource object) in other working documents, position or concept papers, research tools, and communications. I created the definitions using two methods. First, I used existing definitions from recognized sources (e.g., FID's definitions of data, information, and knowledge). These definitions were accepted without modification. Second, I drafted definitions by either creating new definitions for terms that were created by
the PDAC (e.g., The Information Continuum) or modifying definitions for existing terms (e.g., advanced professional training). The PDAC recognized the importance of leaving a record of word meanings to facilitate understanding of their work. The definitions of terms used by the PDAC, with reference to source, were included as Appendix E-1 of their final report (see Appendix A-17).

2. **Analogy.**

For two key concepts, the PDAC created analogies to illustrate meaning. First, to explain the flexible, modular approach of the portfolio of programs and the range of needs of a diverse group of professionals, the PDAC used two analogies to create meaning. I compared the modular structure of the program to a children’s board book where the pages are divided into three sections of various heads, bodies, and feet that could be flipped back and forth on a coil binding to create a new being. The Dean suggested an analogy to the children’s game *Mr. Potato Head*, another example of a figure being created by placing the eyes, nose, ears, and hat in various positions on a potato. These two analogies illustrate the proposed program’s versatility to meet a diverse audience’s needs and the ability to create a program from various components.

Second, to explain distinctions between the proposed and existing programs at the Faculty, the PDAC developed the *Information Continuum*, a three-part sequence of activities for information creation, management, and use. To illustrate the difference between existing programs and the proposed portfolio of programs, the PDAC used the concept of *bookends*. The proposed program would expand the range of competencies at either end of the continuum (i.e., creation and use) by providing bookends that supported or surrounded the middle section (i.e., management) where the Faculty’s current curriculum was focused (see Appendix A-18).

3. **Working documents.**

Throughout the decision-making process, the PDAC worked from draft documents that outlined possible directions for the elements of the curriculum components under discussion. These documents form a developmental record of the PDAC’s efforts to create meaning -- the meaning of curriculum in the general sense of the term and the meaning of their curriculum choices. This record not only provides evidence that supports the decisions made by the PDAC but also gives a background on the recommendations for the governance
process and a foundation for the further development of the design by a subsequent curriculum committee (i.e., development of an idea or position, why certain choices were made). The working documents provide a form of interpretation, an extension of assumptions.

As their consultant, I introduced the working document approach to the PDAC. In past experience, I found that people were more productive when given something to react to rather than trying to create documents from scratch. The use of working documents also provided me with a tool for building consensus within the group. A limitation of the working document is that the power of suggestion, the ability to present a position in a particular way, may stifle participation if the working document is perceived as a statement of a predetermined position or a leading suggestion. Whenever working documents were introduced as first or subsequent drafts, I reminded the PDAC that I had no vested interest, that I was striving to represent their directions. Thus, these discussions about the working documents provided me with verification of my interpretation of their thoughts and choices.

4. *Concept or position papers.*

Once the PDAC established key elements of the direction for the new curriculum, I drafted documents to further explain a key concept (e.g., knowledge management) or position (e.g., program distinctions). These papers were developed to different degrees. For example, the concept paper on knowledge management was basically an outline of key concepts and principles, providing an overview rather than a developed position statement typically found in a white paper. However, the position paper on program distinctions was highly developed and reflected the political importance of establishing the differences between the proposed and existing programs in order to obtain approval for the design from various stakeholders (see Appendix A-11).

5. *Rationale statements.*

When I drafted the recommendations for discussion with the PDAC, I included support statements that explained the rationale for proposing the particular recommendation. At first I included these rationale statements as a means of providing further information to the PDAC members. Since I was interpreting their thoughts, I wanted to ensure that I was correct in my representation of position. As the recommendations document was edited, we decided to incorporate the rationale statements in the full report, as these statements sought to provide more information about the intent of the recommendation and to state the
assumptions on which the recommendation was based. The rationale served as a justification as well as an extension to the recommendation.


The PDAC's Report of Recommendations included an extensive appendix that was almost as large as the main body of the report. As with the rationale statements, I included this information not only to provide evidence from research findings in support of curriculum choices, but also to clarify intention, articulate assumptions, and establish meaning through examples of working documents, research tools and analyses, position papers, market and competitive analyses, and committee procedures. The report appendix also formed an integral part of the record that outlined the PDAC curriculum development project as a proposed model for future projects at the Faculty.

Summary of the Findings

From a critical analysis of the evidence that I gathered during the case study of the PDAC's curriculum design project, I developed a curriculum design process model that reflects a process, a framework, that can be used to manage the complex actions of information seeking, analysis, and application in the problem-solving environment of a curriculum design project for a graduate information studies program. My curriculum design process model has three phases: project definition -- stating the curriculum problem and outlining a structure for finding a solution; solution design -- researching possible solutions, selecting a direction, and defining the components of a program; and solution presentation -- identifying the audience and purpose, preparing or packaging information about the solution, and presenting the findings.

Each of the five processes within the design process model's three phases has a series of corresponding inputs (i.e., information that informs the process) that reflect the information-rich nature and reliance on research of a curriculum development project and outputs (i.e., information produced as a result of the process) that represent the new knowledge that is generated when finding a solution to the curriculum problem.

In addition to the five key processes, I identified two factors that influenced the action of the curriculum design team at every phase of the design process: the aims and responsibilities of professional education -- a commitment to ensure that competent
professionals were produced by the program and the process of creating meaning -- the commitment to ensure that terms and concepts used to describe the curriculum design and its components were adequately explained.

In my role as the curriculum consultant, I facilitated the design team's work, acting as a guide, a guru, and a gopher. As a result of my involvement with the curriculum design process as a researcher participant, I developed this curriculum design process model using the first phase of Diamond's (1989) curriculum development model, *Process for Educational Program Development*, as a framework. My model parallels Diamond's model in three areas: selecting and defining the curriculum project; researching the appropriate approaches to audience, content, and structure; and defining operational aspects of the various curriculum components.

Each curriculum design project brings unique characteristics of environment and influencing factors or issues to the curriculum problem. While a curriculum development model can provide an approach to applying general principles and concepts, the model cannot function as a blueprint to manage a process. Rather, modifications must be made to the framework that will be used as a guide, not as a lock-step technical manual.

My curriculum design process model also differs from Diamond's model in four areas. First, *Project Selection* (i.e., the decision to either create a new program or revise an existing program) is replaced by a phase that defines the project parameters. Second, through extensive research, a range of possible directions are identified, a direction is selected, and a program is defined. This phase differs from Diamond's *Ideal Selection* in that a direction must first be explored before an ideal is proposed within that direction. Third, the proposed model includes an additional step that comes after Diamond's *Operational Sequence*. In this final step of the design process, the proposed solution is packaged and presented as the action that bridges design and implementation (i.e., moves the development process from phase 1 to phase 2). And fourth, evaluating the recommended design is included as part of the final step in phase 2 prior to further curriculum development actions (i.e., the implementation of the developed curriculum in the second phase of Diamond's model).

In addition to the difference in process, two other factors distinguish my curriculum design process model from Diamond's. First, my model recognizes the significant influence that the *aims and responsibilities of professional education* have on developing curriculum
for a professional program. To highlight their importance to every phase of the design process model, I have situated the aims and responsibilities of professional education in a prominent position above the entire curriculum design process. Second, I have represented the design team’s need to construct meaning (i.e., clarify use of terms or concepts, a process known as sense-making) as a significant influence on all of the items that the design team created in order to explain the various components of their design solution (i.e., concept papers, working documents, research tools).

Although Diamond’s model was the framework that had the greatest influence on my development of this curriculum design process model, the works of Dressel (1971), Boyatzis et al. (1995), and Toombs and Tierney (1995) all contributed to my analysis of the research data in the same way that they guided my facilitation of the PDAC process. In particular, Toombs and Tierney’s approach to curriculum development as a problem in design helped me interpret the PDAC process in terms of content, context, and form -- the parameters of a knowledge base, the elements of the environment, and the structure of the program.

My findings from this case study propose a curriculum design process model that can be used in other curriculum development projects at the Faculty, in other information studies faculties, and in other fields of professional higher education. These findings also provide a critical description of one faculty’s particular approach to curriculum design as well as an outline of particular challenges to and lessons learned from the design project experience. In addition, these findings identify a starting point for the further study of curriculum development in professional programs, specifically in graduate information studies programs.
Chapter 5: Summary and Conclusions

Overview

The purpose of this research study, as outlined in Chapter 1: Problem to Be Investigated, was to identify a model that reflected a curriculum design process in a professional education program (i.e., the first phase of curriculum development) and to provide a critical analysis of the design team’s efforts as a record for consideration by future design teams at the Faculty or by other graduate professional faculties. As the facilitator of the curriculum design committee, I was integrally involved in the curriculum design process both as a participant, working toward the committee’s goal, and as a researcher, observing how the committee met their goal.

Using a case study strategy, I identified the key elements of a design process model by analyzing the data from transcripts of the curriculum design team meeting tapes, notes of meeting discussions, components of the committee’s research program, working documents, position and concept papers, the final report of the committee’s program recommendations, and reflections of the design team members.

My design process model, The Information Studies Curriculum Design Model, identifies three phases in the curriculum design process: project definition -- stating the curriculum problem and outlining a structure for finding a solution; solution design -- researching possible solutions, selecting a direction, and defining the components of a program; and solution presentation -- identifying the audience and purpose and presenting the findings. Each stage of the proposed design process model is characterized by specific actions (i.e., activities or decision points that move the process toward completion), inputs (i.e., information that inform the process), and outputs (i.e., information produced by the process). The model also considers two factors that influence the entire curriculum design process -- the aims and responsibilities of professional education and sense-making, the need to construct meaning.

While the design model represents the process followed by the PDAC, it also reflects the influence of the three frameworks that were used as guides in finding a solution to the Faculty’s curriculum problem. Elements from the works of Diamond (1989), Dressel (1971), and Boyatzis et al. (1995) are clearly evident in my design model. My research findings
support the use of general curriculum theory in higher education as the basis for a curriculum development project in a specialized field of study. However, my findings also point to the fact that these general concepts and principles must be modified or augmented with elements particular to the environment of the professional education program in order to address the unique characteristics of the curriculum problem's environment. In other words, an existing curriculum development model may form the framework, but the model must be modified in order to meet the particular needs of each curriculum problem. The model must consider both what Conrad and Pratt (1995) call the “array of practical realities” (p. 345) and the specific environmental issues of the professional education program.

In addition to a process model that can be used as a guiding framework for further curriculum design initiatives at a faculty of information studies, my findings from this case study provide a starting point for the further study of curriculum development in other graduate information studies programs. Although a foundation of theory, concepts, and principles exists to frame a curriculum development initiative in graduate professional education, the literature is lacking examples of the applications of these foundations to specific situations (i.e., information studies curricula).

My case study contributes to the discourse, with a critical account of the specific types of actions (e.g., exploring the range of possible directions, selecting a content area that expands the boundaries of information science, packaging information for stakeholders), inputs (e.g., societal information needs, direction of LIS discipline, LIS education trends), outputs (e.g., curriculum design components, proof-of-concept outline, business case), and influencing factors (e.g., aims and responsibilities of professional education, examples of creating meaning) that were applied in order to successfully solve a curriculum problem for a graduate information studies program.

**Conclusions**

Mayhew and Ford (1974) begin a chapter on attempted reforms in graduate professional education with, “Professional education is undergoing major transformation. Not all fields exhibit the same ferment. Librarians and agriculturists do not seem particularly active...” (p. 29). Twenty-five years later, information studies educators exhibit a significant
amount of ferment, not only in the range of challenges and opportunities but in the depth of revision and repositioning that is taking place internationally.

My analysis of the research data from this case study produced a curriculum design process model, a tangible reflection of the PDAC's work. In addition to this curriculum design process model, my analysis led me to several conclusions about curriculum development in a graduate information studies program -- insights that I gained from my experience facilitating a complex design process in a field of study undergoing significant change. These conclusions supplement the narrative of the curriculum design process model, which I discussed in Chapter 4: Findings, in the form of challenges to curriculum development in graduate LIS education that I observed and lessons that I learned from my participation in and critical analysis of the PDAC's curriculum design process.

**Challenges to curriculum development in library and information studies programs.** A curriculum development model never stands on its own in the literature. The model is usually presented in some form of a two-dimensional graphic, and the various elements are then described in accompanying paragraphs. Most discussions of curriculum development models supplement the components of a diagram or flow chart and its corresponding narrative with additional material about the development process discussed in terms of characteristics, issues, influencing factors, considerations, obligations and responsibilities, challenges, essential elements, facilitating agents, and the like (e.g., Conrad & Pratt, 1995; Diamond, 1989; Dressel, 1971; Miller & Seller, 1990; Stark & Lowther, 1986; Toombs & Tierney, 1995). In other words, the graphical representation of a procedure is augmented with a description of how a practitioner might actually complete the curriculum development process.

In my analysis of the data for creating a curriculum design process model, I observed that, in addition to issues with a general effect on the phases of the model (i.e., the influencing factors), there was a series of challenges to the design process -- conditions that needed extra attention or problems that had to be resolved in order to successfully meet the design goal. Through reflection on the PDAC process, I identified seven challenges to this curriculum development project that could also relate to other schools of library and information science (LIS).
1. **Using available LIS curriculum development models.**

Within the community of LIS professional preparation schools, no specific curriculum development models that inform or guide the curriculum development process were identified. While the LIS education literature outlines the need to evaluate and revise curriculum, case studies and reports on examples of curriculum development initiatives are limited in number. The majority of the accounts of curriculum development initiatives that exist are from foundation-funded curriculum projects and reflect circumstances not typical to most LIS school curriculum development initiatives. Or the studies focus on efforts to revise existing core programs, not to develop new program directions. (See Chapter 2: Review of Related Literature for examples.)

This limited record of curriculum development experience and research into frameworks to guide the design process leaves LIS schools without elements specific to the characteristics of their field of professional preparation. LIS schools considering curriculum development initiatives must identify models and guidelines from general higher education or other professional disciplines and then either apply or modify them, without the benefit of experience, to their own environment and circumstances.

2. **Planning curricula in an evolving discipline.**

Curriculum development for LIS schools is challenged further by the rapid evolution of the discipline of information science. Defining a new role for information professionals in a knowledge-based economy, providing comprehensive knowledge on the management and use of emerging technologies, and defining the boundaries of converging disciplines are three key factors to be considered in the LIS curriculum design process. Curriculum development initiatives are identifying a new prospective student, content direction, and program structure in order to meet the challenges of professionals working within an evolving discipline. As a result, LIS curriculum initiatives must be visionary in order to predict future trends, anticipate the needs of society, and identify corresponding competencies required by the professionals in order to practice. Newly designed LIS programs must also be competitive in order to address similar developments in related disciplines (e.g., business management, computer science, engineering) as well as the increased availability of courses and entire degrees offered via distance education methods from other LIS programs.
3. *Balancing the technology focus.*

The rapid growth in number and increased capabilities of computer and telecommunications technologies has created a significant challenge for selecting the content direction and course make-up for LIS programs. PDAC research showed that the primary challenge identified by organizations designing knowledge management programs was the need to establish policies and procedures to facilitate the knowledge transfer process within the organization. The primary direction identified for addressing the organization's knowledge management challenges (i.e., activities underway) was designing and implementing information technology systems. This research identified a disconnect between the identified need and the actual strategies implemented.

LIS curriculum development directions must manage the overwhelming focus on technology as the perceived solution to information and knowledge management challenges by designing programs that address content creation, management, and use as the primary focus, with computer and telecommunication technologies identified as the enabling infrastructure.

4. *Defining the information professional.*

Traditionally, librarianship has been the primary focus of LIS programs. As the discipline of information science has evolved to include more than library science, LIS programs have revised existing library-oriented curricula in order to address technology opportunities and challenges in libraries. And new programs have been or are being developed to prepare a wider range of information professionals working outside of libraries. However, the term *information professional* is not widely understood by organizations, nor is a standard set of characteristics and competencies of an information professional accepted within the LIS field. Without a recognized definition, set of characteristics, and list of competencies required, developing a new curriculum for the information professional poses another challenge. As new curricula are designed, developers must address the challenges of creating a program that will establish credibility, advance the profession, create a new role for information professionals, attract to the program professionals other than traditional librarians, and establish credibility within the university and society. LIS programs must articulate their definition of an information professional in order to clarify their program direction and promote an understanding of the competencies and practice of these professionals.
5. *Addressing conflict between the library and information professions.*

As noted earlier, the primary focus of most LIS professional preparation programs is librarianship. The library profession has a long history of battling stereotypes and creating awareness of its capabilities and value beyond the physical space of a library. Within the profession, the debate continues about the use of library and librarian to describe a type of place and kind of professional. The American Library Association’s Council (ALA) is monitoring the trend of professional programs that are dropping the term library from the school’s program name and the discussion about whether or not schools without library in their name should be accredited by ALA, especially when “...graduates no longer enter librarianship” (i.e., “Keeping the Library in Library Education,” *American Libraries*, 1998). Another challenge for LIS curriculum development is to address professional accreditation affiliation on the basis of the broader scope of information and knowledge management compared with the narrower scope of library science.

6. *Establishing partnerships while maintaining position.*

The field of knowledge management relies on components from a variety of disciplines: information science -- the policies, processes, and procedures of information and knowledge management and use; computer science and engineering -- the enabling infrastructure of information technology; and management -- the value of knowledge that creates a competitive advantage. Curricula for preparing knowledge management professionals cannot be based solely on the principles and practices of information science. Cooperative program development, where the interests of individual disciplines are equally represented, is one approach for creating a curriculum from a hybrid of disciplines.

However, information studies programs are usually smaller and have fewer resources than most business or management schools and computer science or engineering faculties. One PDAC member compared a cooperative arrangement between information studies and a faculty of management to having a business meeting with Microsoft Corporation. The dominant organization prevails, often to the point of engulfing the smaller innovator. A challenge for LIS programs is to establish LIS competencies as the core requirement of the new knowledge management professional program and to maintain a role as facilitating agent among the collaborating parties.
A second form of partnership is establishing cooperation between the new program and the knowledge management professionals' employers. Partnerships with government and private and public sector organizations that encourage dialogue will ensure that employment needs are addressed as the curriculum is developed, that students participating in the programs will obtain the competencies required.

7. **Identifying a manageable focus.**

Given the extensive range of environmental factors affecting the field of information science (i.e., the expanding role of information professionals, the convergence of competencies required from a variety of disciplines to prepare professionals, the growth in number and increase in complexity of information technologies, the increasing demand for knowledge workers, and government initiatives to establish a knowledge-based economy), perhaps the greatest challenge to LIS curriculum development is establishing a focus for the program -- identifying a manageable direction in order to succeed. With change occurring on multiple levels, the challenge is to identify the opportunities, evaluate the options, select a direction, and develop an expertise as a foundation for growth.

**Lessons learned from the PDAC experience.** One of the influencing frameworks for the PDAC design process was the work of Boyatzis et al. (1995) from Case Western Reserve's Weatherhead School of Management (WSOM). The six lessons learned from a multiphased evaluation and revision of the school's entire curriculum, where the curriculum focus was shifted from content to the learner, were presented to the PDAC at the first meeting as part of the introduction to the fundamental principles of curriculum development. The WSOM's curriculum problem differed significantly from the PDAC's project. And yet, the experiences of another professional school's redirection efforts provided guidance to the PDAC.

While this case study was not intended as an evaluation of the lessons learned at WSOM as they might have applied to the PDAC project, my analysis of the data confirmed that these lessons were applicable to the PDAC experience and influenced the committee's thinking and approach, especially my work as the committee's facilitator. From the PDAC experience, I identified the following lessons that supplement those learned by the WSOM curriculum team.
1. **Focus on emerging issues, not current problems.**

There is a tendency in preparing information professionals to design curricula that focuses on the issues currently affecting the profession. These issues were well known to the PDAC members, many of whom were experiencing the challenges of providing expanded information services within their own organizations. However, the PDAC was aware of the need to create a program that would be relevant after the curriculum development period and would not be eclipsed by the evolving discipline, especially further advancements in technology. The PDAC’s goal was to design a program for the future -- a program with as much flexibility and modularity as possible in order to address the constant change experienced in both the profession and the field of study. Not only was the PDAC concerned about relevance of the curriculum, another objective was to establish the Faculty as a leader in developing information professionals who could anticipate change -- who were visionaries that were proactive, not reactive.

2. **Lead by example.**

A school of information studies must be a leader in applying the principles of its discipline and in using appropriate learning technologies. The Faculty should “walk the talk” was the advice received from key informants, especially the information industry research participants. A responsibility of a professional preparation school is to provide leadership to the profession by employing the latest research findings and continually pushing the envelope to develop the profession. The PDAC designed a program structure that would serve as an example of best practice, a program that embodied the principles of knowledge management and incorporated state-of-the-art educational technologies as an integral part of the program delivery.

3. **Test the direction.**

The content direction for the PDAC’s design project was outlined in the Faculty’s academic plan. However, the content direction specified in that plan was no longer relevant due to the continued evolution of the discipline. The PDAC was instructed to think of the direction as a placeholder, a term used to signal the need for significant change. In planning the new program, an element that was more prevalent than any other issue was time -- the length of time required in order to design a curriculum, to obtain governance approval, and to develop and implement a program. A further span of time would pass before the students
would complete the program and then apply their learning to job situations. The effectiveness and relevance of the PDAC's curriculum design could not be measured immediately. In fact, analysis of evaluation results could be up to a decade away from the initial program design.

The PDAC planned a proof-of-concept approach as a means of testing the direction and structure of the proposed portfolio of programs as well as the type of prospective student -- an evaluation of the proposed design before the course-specific curriculum was developed. With a series of continuing education institutes, the Faculty could test the various components of their curriculum design. To provide a form of evaluation, PDAC members would be participant observers at the institutes to gather data that would be reviewed by the Dean and other decision-makers at the Faculty.

The PDAC also saw the proof-of-concept as a means of beginning to establish its credibility with new constituent groups, to inform the profession of its planned change in curriculum direction, and to garner support from the various stakeholder groups necessary to move the program through the governance process.

4. Understand the competition and position for success.

Competitive advantage, risk analysis, best practice, competitive intelligence, opportunity analysis, environmental scanning, business case -- these terms are not the usual vocabulary used in higher education curriculum development. As the senior administrator of a professional preparation faculty with strong ties to private sector businesses, the Dean strives to maintain relationships with the employers of the people who are educated in the Faculty's programs, while retaining the distance required to remain impartial in research efforts. However, a faculty providing introductory and continuing professional education in a field of study that draws on competencies gained from multiple disciplines must compete with other faculties and programs in order to maintain and expand its programs and successfully place its graduates in the workforce. Competition for program resources, prospective students, innovative faculty, and government and industry sponsorships is a reality for a professional faculty. The LIS school must establish a position within the university and the LIS community of educators in order to obtain the necessary resources and establish credibility for its degrees and programs.
Understanding what other faculties and schools were offering, including the audiences for whom these programs were intended, was vital to the PDAC in order to distinguish the proposed portfolio of programs in the competitive environment of continuing education.

Reflections on the Curriculum Design Process

Reflective practice is a purposeful activity in which an individual reflects on past experience in order to achieve a desired outcome such as solve a problem, change a behaviour, or plan an action. It is a phased, cyclical activity that is accomplished through a variety of individual or group methods such as writing analytical journals, engaging in conversation, or conducting research.

Dewey (1933) distinguishes reflection from other activities known as thought by stating that reflective thinking "...involves (1) a state of doubt, hesitation, perplexity, mental difficulty, in which thinking originates, and (2) an act of searching, hunting, inquiring, to find materials that will resolve the doubt, settle and dispose of the perplexity" (p. 12). The concept of reflective practitioner was popularized by Schon (1983), a social scientist and industrial consultant. However, references to the practice of reflective activity, which was coined by Dewey, can be attributed to Aristotle, Socrates, and later, Locke. In addition, references to reflection are made in a cross-section of works including the writings of educational theorists such as Lewin, Kolb, Flavell, Piaget, and Freire.

One method of assessing one's experience during either a formal or an informal learning process is through reflective activity. Posner (1985) provides a simple formula: Experience + Reflection = Growth, echoing Dewey's suggestion that people "... learn from experience as much as we learn from reflection on experience" (p. 19).

Although the lessons learned, outlined earlier in this chapter, are the result of reflection and critical analysis, they apply to the various elements of a specific curriculum design process -- lessons learned from solving a particular curriculum problem. I took a further step back from my analysis of this case study to look at the process of curriculum design in more general terms.

Even though the action of reflection often suggests that a problem is solved -- an answer has been identified -- the following points have not yet been fully resolved. They have been identified to stimulate the discourse and my further research in the field of curriculum
development as well as extend my personal learning from this case study of the PDAC's design project. I have grouped these items into two categories: the curriculum design process and the role of a curriculum design team facilitator.

The curriculum design process. Through my review of the literature, my analysis of the PDAC case study, and my reflection on my involvement with the use of frameworks as guides to a design process, I have identified four general areas that provide insight on my decisions to include certain elements in my curriculum design process model. These elements characterize the uniqueness of the curriculum design process to a particular situation -- a specific curriculum problem -- while also building on general concepts and theories of curriculum development in higher education.

1. Curriculum development models.

From my experience with the PDAC, there is no question about the importance of identifying a framework to guide a curriculum development project. Diamond's (1989) five reasons for using a model (i.e., key factors are identified in sequential order, it serves as a procedural guide to manage a project, the roles and responsibilities of planning team members are identified, it ensures that critical questions are asked and alternative solutions explored, and it avoids duplication of efforts) were well supported by this case study's successful use of frameworks.

In this case study, I developed the initial framework for the curriculum design process by combining the approaches of several curriculum theorists and practitioners. However, the central focus of the framework that I used with the PDAC design team was a curriculum development process model developed by Diamond. As noted earlier in a discussion of process models, Diamond's model includes more than an outline of the steps that a practitioner should follow in the form of a step-by-step manual -- the procedural or prescriptive overview of the work to be accomplished. Diamond's model also includes a descriptive element in the form of a discussion on the characteristics, influencing factors, facilitating agents, and the like. This supplementary information provides the details of how a practitioner would actually do curriculum development — a description of the actions taken to complete the prescribed steps.
My reflection on the use of curriculum development models has identified two areas that warrant further discussion: the currency of general curriculum development models and the importance of a model to various members of a curriculum design team.

a. Currency.

Throughout the discussion of my findings, I highlighted the need for experienced practitioners to provide examples of their application of general curriculum development principles and procedures to specific curriculum problem environments. With these examples of practical application, the unique characteristics present in each curriculum problem and the approaches to address these variables could serve as guides for other curriculum planners. Upon further reflection, the issue of modifying or combining elements from curriculum models for specialized circumstances is only one aspect of the usefulness of these general process models. In addition to this central question from my case study is the question of currency. Can models created in the 1970s and 1980s maintain their relevance to current situations?

Although Diamond's model had been modified over a 20-year period, the form of the model used by the PDAC was at least 10 years old and did not reflect current issues affecting higher education today. For example, neither his model nor the accompanying narrative address the curriculum development team's need to understand a program's competition. The financial pressure of competing for reduced program development budget dollars as well as competing for students whose choices for furthering their education are numerous reflect key factors to consider when designing a new curriculum. Inadequate funding in public institutions of higher education can be off-set by the willingness of the private sector to become more involved in the teaching and research directions of academia. However, private sector involvement with higher education directions is not welcomed by many sectors of the university. This type of current political debate coupled with inadequate funding creates a tension for curriculum development that should be considered by a model guiding a design process.
To be relevant, a general curriculum development model should reflect the current environment of higher education and address the challenges of that environment in the process of solving any given curriculum problem.

b. \textit{Importance of a model to the curriculum developers.}

The models and approaches that the PDAC used to create a framework were invaluable as a resource to the novice curriculum designers on the PDAC — members who were concerned about the extent of the task, the complexity of the design process, and our ability to complete the task in the allotted time frame. For the majority of the PDAC members, the stated goal and objectives remained the motivation for moving ahead. After several weeks into the project, Diamond's model, Dressel's theory, or Boyatzis et al.'s lessons learner were no longer discussed in terms of the various steps along an operational workflow diagram. As a framework, the Diamond's model provided an approach to thinking about curriculum development that did not constrain or discourage modification. As a resource, it provided a guide that clarified procedural issues.

While the framework used with the PDAC did not completely meet the needs of the committee as it sought a solution to the curriculum problem, it provided the basic elements necessary to start the process moving forward. It also provided a list of criteria in the form of curriculum components to consider as the PDAC formulated its final recommendations.

One of the objectives outlined for the PDAC was to provide comment on the curriculum development process. I developed a brief, short answer survey for the PDAC members that was circulated at the last meeting (see Appendix A-19). The PDAC Chair requested that the responses be returned in time for an analysis to be included in the final report. We also discussed reactions to the design process at the final working meeting.

Generally speaking, the PDAC members were enthusiastic about their participation, which reflected, once again, their commitment to expanding educational opportunities for information professionals (see Appendix A-20). However, their comments on the curriculum design model itself were not substantial, which points to the fact that the PDAC members were not focused on the \textit{process} of curriculum
design. Their comments regarding the actual process included a concern about the multiple drafts of the working documents and the amount of time that a project such as theirs took to facilitate.

As part of the final report, I also contributed a critical analysis of my role as the PDAC’s facilitator and the use of a model to guide the design process. Given the amount of time I had available to meet the report’s deadline, my comments were based on a rather hasty analysis. Of importance to this case study is my observation on using a curriculum design model.

At the first PDAC meeting, we talked about the elements of the curriculum development process and reviewed the framework which would guide the committee. Using the model and the corresponding work plan was extremely useful for me as the facilitator. These guides kept me focused and on track. However, it is unclear to me how useful the design model was to the committee members. Their reflections on the use of the model were extremely brief or sketchy at best if any comment was made at all. I recommend the continued use of a design model, but wonder if there is a different way to judge its success. Perhaps as was suggested by Dressel and Diamond, it is important that the form doesn't overtake the substance. And in that light, the model was successful.

(PDAC Report of Recommendations, p. 89)

Six months after completing the PDAC report and turning to my analysis of the PDAC’s design process for this case study, I have had a further opportunity to analyze what transpired with the design team and reflect on the success of the process that we followed. I noted in my journal after completing the first round of data analysis, “Team -- their focus is more on the committee objectives -- not on the process.” For the PDAC, the achieving the end was far more important than understanding the means. For me as the committee’s facilitator, I relied heavily on the prescriptive and descriptive elements of the models in order to guide the process.

2. Components of the curriculum design process.

In one of the lessons learned, Boyzatis et al. (1995) recommend that the curriculum development team should adopt an outside-in perspective, an ability to look outside the confines of the program or school in order to learn the key issues affecting the environment that can then be used as the basis of change. Although I did not understand the importance of this lesson when I first planned the PDAC project with the Dean, I later recognized it as
a central component of our project design, particularly how we selected the members and chair of the PDAC and how I outlined the PDAC research program. This lesson, in fact, became a catalyst for change -- the change in how the Faculty approached curriculum development with the PDAC process.

Through the PDAC process, the Faculty introduced several changes to the approach and methods of curriculum design used in previous curriculum initiatives including: the committee structure, which employed a curriculum consultant to facilitate the process; a formal research program, which informed the decision-making of the design team; and a public relations effort, which involved stakeholders and marketed the new direction of the Faculty throughout all of the project's phases.

a. *Committee structure.*

For the first time, the Faculty hired a curriculum consultant to facilitate the process, which shifted the workload from the committee chair to me and provided a resource focused on the successful completion of a task. As an *outsider,* I had no vested interest in the outcome, but I had a great deal of interest in moving the project toward its goal. This approach allowed the committee to accomplish more in a shorter time frame while freeing the PDAC Chair and members from the day-to-day operation of a committee, the logistical details of a research program, and the creation of multiple drafts of working documents. It allowed the committee members to focus on why they were there -- to contribute their collective knowledge and identify a new program direction for the Faculty.

The PDAC members included people working as senior information professionals -- people with a great deal of experience in the challenges of meeting current information demands in both public and private sector organizations. Their *outside-in perspective* was invaluable to the committee process as it provided a balance between the perceived needs as understood by the Faculty and the actual needs as articulated by the community.

Using external stakeholders to shape decisions was not a new approach at the Faculty. External stakeholders have been involved in the Faculty Council, the Dean's Advisory Board, and advisory committees on the development of continuing education programs. However, the PDAC project was the first time that a curriculum
committee comprised such a wide range of external members. This committee structure signaled the Faculty's commitment to the importance of external views on the various elements of developing new curriculum.

b. The research plan.

Although information gathering is identified as a component in the majority of the curriculum models that I reviewed, few models established a formal research program to feed the information needs of the decision-making process of curriculum design. Perhaps the PDAC was more research-focused because one of our objectives was to establish a process that could be used in future curriculum development and we were conscious of recording the process that we undertook. Or, perhaps our research-focus was a natural extension of the central role that research plays in the life of the Faculty.

However, I believe that there were additional reasons why research became so important to the PDAC process. First, our guiding frameworks encouraged the gathering of information. In particular, Diamond's (1989) approach regarding thinking in the ideal and the advice from Dressel (1971) and Boyatzis et al. (1995) to consider stakeholder opinion encouraged us to seek input from a wide variety of internal and external sources. This information gathering was accomplished by a formal research program. Second, our commitment to move the profession upstream, to expand the boundaries of the role of an information professional, motivated our search for what upstream actually meant. We needed to consult with members of the profession and with the people who employ those professionals. Third, our concern regarding the resources required to develop, implement, and maintain a new curriculum caused us to be somewhat cautious in choosing a new direction. We needed to validate that knowledge management was a content direction that was worth pursuing, that it was more than a passing trend or what we came to call "the latest Peter Drucker bestseller." And fourth, the coupling of my dual role as the facilitator and the observer of the PDAC process with my doctoral research program resulted in a rigor that I brought to the process that I might not have applied in a curriculum development project outside of my own personal research program.
In the end, the research efforts of the PDAC produced valid findings. The recommendations that the committee put forward were based on a solid foundation of evidence collected and analyzed as part of the curriculum design process. The knowledge management content direction that was discussed at the initial meeting of the PDAC was a hypothesis, a projected direction, that was well supported with evidence by the time that the PDAC’s research program concluded.

As the proposed portfolio of programs in knowledge management is further developed at the Faculty, the curriculum team will have a significant body of research evidence to support their efforts. This research, then, becomes as important to the development phase as it was to the design phase.

c. The public relations and marketing focus.

The work of the PDAC exceeded its objectives, accomplished more than the Dean and I expected when we planned the approach. Not only did the PDAC meet its goal to provide recommendations on a program direction, the curriculum design process itself yielded far more than a report for the Dean. It signaled the Faculty’s commitment to a leadership role in the field of information studies, created an awareness among internal and external stakeholders of new programs that would be offered in the near future, and formed new relationships with possible employers of the Faculty’s core masters degree recipients.

The PDAC research program, in fact, functioned as a public relations and marketing tool for the Faculty. Stakeholders who were asked to be research participants were informed of the Faculty’s plans to expand its existing programs and were made aware of the Faculty’s mandate to develop a program that would reflect the future needs of information professionals. At one information session where I was learning about knowledge management, the conference participants to whom I explained my role at the Faculty were unaware that a professional school actually made a concerted effort to understand the needs of the employers of its graduates. The Faculty was seen by these potential employers as a progressive professional school -- a place where collaboration on program development was encouraged and a place that should be considered when looking for new employees.
3. *The political ramifications of curriculum design decisions.*

The PDAC had difficult decisions to make regarding the proposed content direction, program structure, and prospective student. The final recommendations would not only move the Faculty in a new direction, where the chosen content focus was an emerging field of study that represented a convergence of disciplines, but the choices would also challenge the Faculty to attract a new type of student (i.e., mid-career, non-traditional information science background), to become proficient with new learning technologies (i.e., distance learning, web-based courses), and to establish a new financial model (i.e., self-supporting program).

The PDAC recognized that its recommendations were aggressive. In the full summary to the final report, the PDAC wrote:

> The PDAC recognizes that the list of recommendations represents an extremely bold initiative for the Faculty, an aggressive undertaking which may at first appear to have been made without consideration of the resource implications necessary to implement such a portfolio of programs. However, by following the program development direction as articulated by the university and partnering with other university faculties, various levels of government, as well as public and private sector organizations, the Faculty has the opportunity to facilitate a collaborative venture which will be both a model within the university and to the rest of the LIS schools that are currently reviewing their curriculum development directions. *(PDAC Report of Recommendations, pg. 66)*

In making its decision on the recommendations, the PDAC was concerned not only with the question “Is information studies the right ‘place’ for a program on knowledge management?”, it was concerned about the need to collaborate with other faculties with an interest in knowledge management and yet retain its central role in the development and implementation of the program. Once again the unique characteristics of the curriculum problem’s environment have a substantial effect on whether or not the curriculum development project will succeed.

4. *Curriculum development in professional faculties.*

Linked with the earlier discussion on including the means of addressing all aspects of the current environment, the aims and responsibilities of professional education introduce another element to the curriculum development process in professional faculties -- the need
to articulate a faculty’s position regarding its perceived role as a provider of educational opportunities in the areas of professional preparation and continued growth of professionals.

Given the PDAC members’ overwhelming commitment to furthering the role of the information professional through formal education, the emphasis on professional responsibilities should not be lost in a discussion of identifying a process for future curriculum development initiatives. This commitment is reflected in the proposed design process model as one of the two influencing factors.

Aspects of the Faculty’s position on its professional responsibilities can be identified within its mission and goals statements. However, a formal statement on the Faculty’s roles and responsibilities would have provided guidance to the PDAC as it designed its research program and formulated its recommendations. A discussion of the Faculty’s statement of professional responsibility combined with the curriculum objectives outlined in the academic plan and the Dean’s directives would have more accurately positioned the curriculum design team to solve the curriculum problem.

The role of the curriculum design team facilitator. As the deadline for completing the Report of Recommendations drew near, I experienced a number of feelings: excitement that the recommendations represented a bold, aggressive new direction for the Faculty; concern that I had been able to adequately state the case for the Dean to take forward to the various governance levels; pride in my role in a successful project; frustration that I wouldn’t necessarily be involved in the implementation of the design; and relief that the process was coming to an end.

My role as the PDAC consultant was a new experience for both the Faculty and me. I modeled my role on Diamond’s (1989) description of an instructional developer.

Surprising as it may seem at first, one of the most useful people on a project is someone with teaching or professional experience outside the content area involved... a trained professional who has experience in design, understands teaching and the use of technology, and most importantly, can work well with faculty in a supportive role.

By coming to the project without the discipline’s vocabulary and without the traditional viewpoints of the profession, this person can test assumptions and, without being a threat, question what is being done and why.... In a sense, the developer is a surrogate student.
The role of the developer is to chair working meetings, to bring to these meetings other resource people as appropriate, to ensure that the model is being followed, and equally important to make sure that the project team keeps moving.

Although my qualifications do not completely match Diamond's suggestion for a instructional developer, I possess the majority of the competencies that he identifies. Reflecting on my involvement with the PDAC curriculum design project, I categorize my role as the committee facilitator and consultant in three areas: a guru, a guide, and a gopher.

1. **Guru.**

As noted earlier, I was the only person on the PDAC with formal education in curriculum development. While most of the faculty members had developed their own courses or participated on a curriculum review or development committee at the Faculty, none had studied curriculum development or had used a formal curriculum development model to guide previous projects. I became, then, the expert on curriculum design, and the PDAC looked to me to provide guidance on the process.

In addition, I was the one who completed the majority of the research activities. I produced the research plan, developed the research tools, implemented the research projects, gathered the data, analyzed the data, and presented the findings to the PDAC with two exceptions. The PDAC members were part of the first key informant focus group where the Dean, the PDAC Chair, and I were the small group leaders and presenters to the full group. And one of the PDAC members arranged and accompanied me on the site visits to the organizations where the library had been repositioned to function as a knowledge centre. Since I was the closest to the data, I was the resource for further information on specific research questions, findings, or analysis of a situation -- the person with the collective knowledge about the industry trends, the information environment, and the network of key informants and research participants who had been identified by the PDAC members.

2. **Guide.**

My role as resource person to the PDAC curriculum design process logically lead to my role as the process guide. As the person who drafted the PDAC work plan and milestones, I was also responsible for keeping the process moving toward its goal. I met with the PDAC Chair before the meetings to outline our objectives and provided back-up to ensure that these
objectives were achieved. I also met with the Dean to review the PDAC project’s process and suggested next steps and strategies for ensuring that the stakeholders were kept informed of our process.

As the guide, I set the meetings at points where we needed the PDAC members’ input -- their opinions on curriculum components and their decisions for the final recommendations. I kept them informed of the progress of the various research projects via the PDAC listserv and distributed electronic copies of working documents and other information resources.

3. *Gopher.*

Facilitating the PDAC also meant managing all of the logistics behind the committee meetings. Without any clerical help, I had to complete all of the photocopying, meeting room arrangements, mailings, and the sundry tasks that support a research program. The role of gopher also included completing research for the PDAC members on topic areas that were identified during discussions, resolving conflicts of schedules, and following up with research participants.

While at times these tasks seemed overwhelming when trying to focus on achieving the PDAC goal, this level of involvement with the PDAC provided me with a comprehensive experience. Not only was I able to learn about the process of curriculum development, but I was able to see first hand the myriad of details that make the process work.

**Limitations**

As with all research studies, there are certain elements that should be highlighted in order to position the research findings in light of possible limitations. In my case study, I have identified two areas for discussion.

**Challenges to the proposed model.** The proposed curriculum design process model emerged on my office wall as I re-arranged sticky notes with actions, inputs, outputs, and influencing factors grouped according to size and colour. In the second step of creating the model, I drew drafts of workflow diagrams in an attempt to accurately express the movement through the various steps of the design process and identify the relationship among the various elements of the model.
During the process of finding the curriculum model within the mountains of data, I recorded my questions and concerns in my journal. What was I going to call these things that seemed to be involved with the decision-making process at every step of the design -- were they influencing factors, facilitating agents, or general effects? Where would I put the notion of the proof-of-concept -- did it belong with defining the program or in presenting the solution? Are the influencing issues that I identified really just challenges that should be included in a discussion rather than represented in a model? Are professional responsibilities significant enough to stand on their own as an influencing factor -- should they be included as an input at several stages? And like a person who talks to himself or herself on a regular basis and has a limited memory, I used my journal to record my conclusions and the reasons that I made a particular decision.

This description of part of my data analysis process illustrates just a few of the many choices that I made when developing the design process model. Where they good choices? Should I have chosen different directions? Does the model accurately identify the process that was followed? Although reliability and validity were addressed in Chapter 3: Methodology, the fact remains that the proposed design process model has yet to be tested in another situation. And the bottom line in this study is an unanswered question: Is the model any good?

The answer lies with the Dean and the Faculty or any other curriculum design team working on a development project in professional or higher education that chooses my model as an influencing framework for their process and tests its value to the design of their curriculum development project.

Limited continuing education focus. The Faculty's commitment to continuing education is evidenced in its comprehensive program of workshops and certificates. The Faculty's continuing education department is considered a leader in Canada in that it offers a wide range of topic areas via web-based courses, teleconference sessions, and onsite classroom instruction with the back-up of a state-of-the-art learning laboratory. The program's instructors include both faculty and expert practitioners.

The directives to the PDAC were clearly stated in the outline from the academic plan and in conversations with the Dean. While the academic plan called for a degree program, the Dean reinforced the that these points were placeholders, that the PDAC was to make
recommendations that reflected the current needs of information professionals and their employers. The continuing education aspect of the Faculty’s responsibilities to information professionals was considered by the PDAC, but it was not fully developed until the concept of a portfolio of programs was introduced and the recommendation was made that the curriculum direction, program structure, and prospective student identified be tested before further development of the recommended design.

Near the end of the PDAC’s design process, it was clear that we had not focused on the principles and concepts of professional continuing education. In addition, I did not undertake any research of the literature regarding possible models for curriculum development specific to continuing or adult education. This omission is not intended to devalue continuing education, which is recognized as a significant component and responsibility of professional education (Houle, 1981).

On reflection of the omission of continuing education as part of the curriculum design process model, there is a limitation in that the proposed design model was developed with a full degree program as the focus. However, in the end, the PDAC recommended that continuing education should form a portion of the portfolio of programs and that the first step in development should include a continuing education program in the form of an executive training institute.

Suggestions for Further Research

This case study and the proposed design model represent my initial research in the process of curriculum development in graduate information studies programs. While the case study provides an example of one faculty’s approach to curriculum design and the design process model suggests a framework to be used as a guideline in other design initiatives, I have identified three general categories for further research into this specific area of curriculum development.

1. Proposed curriculum design process model.

Diamond’s model for curriculum development, which was used as a framework for the PDAC design process, was first developed in the early 1960s. Over a 20-year period, Diamond made significant revisions to his model as curriculum development teams applied the model in a variety of disciplines and situations. The design process model proposed from
this case study has yet to be used in another curriculum design project. Thus, the model takes the form of a working hypothesis, an approach that warrants further investigation as a model for the Faculty to follow in future design efforts and for other information studies programs or additional professional programs to adapt and modify to their specific environments.

Research that evaluates the proposed design process model and suggests revisions is required in two general directions: the PDAC experience -- the effectiveness of the model to produce a curriculum design that could be further developed into a full program; and additional applications -- the effectiveness of the model in other types of curriculum development initiatives, at both information studies programs and other professional programs.

a. **Evaluation of the proposed model's application to the PDAC project.**

To simply evaluate whether or not the proposed design process model accurately reflects the PDAC's process (i.e., validates this case study's findings) is a small portion of the suggested further research directions. The more important question for evaluating the proposed model is associated with its usefulness as a framework for further curriculum development initiatives at the Faculty. Was the design process successful? Were all of the required processes and elements included? Did the design process as represented by the model produce a useful product as a foundation for the completion of the curriculum development project (i.e., the development, implementation, and evaluation of the proposed curriculum design)? Was the design process effective in providing sufficient information for the Dean to gain stakeholder support and governance approval? Given that one of the PDAC's objectives was to provide a design process model for further use at the Faculty, an evaluation of the proposed model's effectiveness as a framework could take place in subsequent curriculum initiatives within the Faculty.

b. **Evaluation of model's application to additional projects.**

The broader significance of the proposed design process model to LIS programs and other professional programs requires further evaluation. While North American LIS programs are implementing substantial curriculum development and revision projects, the literature on LIS education contains few case studies of these projects and proposes few curriculum design process models to use as guiding
frameworks. Testing the general use of the proposed model as a framework for other LIS programs would contribute to the discourse on curriculum development in graduate LIS programs.

The proposed design process model should also be evaluated for its effectiveness in guiding curriculum development initiatives in other professional programs and its generalizability to the broader discourse of curriculum development in graduate professional education.

2. **PDAC curriculum design process.**

The purpose of this case study was to identify a process model that could be used in subsequent curriculum design efforts and to provide an account of one faculty’s approach to curriculum design. However, in analyzing the data from the case study, I identified additional elements of the PDAC’s design process that warrant additional inquiry. Further research on the PDAC’s design process could add to the discourse on curriculum development in both LIS graduate education and other disciplines of higher education including professional and nonprofessional programs. For example:

a. **The use of technology as a tool in curriculum development.**

The PDAC project employed technology in a variety of ways: e-mail discussions between individuals and via a dedicated listserv to supplement group meetings and facilitate communication in between meetings; e-mail and web-based surveys to gather research data; and a web-site to provide information to the project’s research participants, the Faculty’s members and stakeholders, and the LIS community at large. These uses of technology met with varying degrees of success. Further study on the use of technology as a support tool for curriculum development projects would provide guidance for effective application of appropriate technology infrastructures and evaluation of user behaviour.

b. **The use of working documents to aid decision-making.**

Diamond (1989) strongly suggests the use of diagrams as an effective communication device in curriculum development. During the PDAC project, few diagrams were used. Instead, the PDAC used working documents as a primary tool for generating discussion and communicating ideas. The development of the working documents, both their content and structure, reflects the thought processes of the
PDAC. An analysis of these documents could explain the rationale used for the choices made by the PDAC members in this particular curriculum design project and might illuminate the nature of decision-making in curriculum development.

c. The organization of knowledge in converging or emerging disciplines.

One of the greatest challenges in the PDAC project was addressing systemic change — the expanding role of information professionals, the availability and use of computer and telecommunications technology, and the information and knowledge needs of society. Knowledge management, the content direction chosen by the PDAC for the proposed portfolio of programs, is a relatively new concept that has roots in multiple disciplines.

Defining the discourse of knowledge management, identifying the competencies required by knowledge management professionals, and understanding the roles of various faculties in creating relevant knowledge management programs are significant issues for developing curriculum in a new field of study. Further research into the challenges of curriculum development in emerging fields, particularly the LIS field, could provide examples of approaches for consideration by developers in evolving disciplines.

3. Curriculum development in graduate professional education.

As seen in Chapter 2: Review of Related Literature, there are a limited number of examples of curriculum development in graduate professional education and of these examples, few provide detailed information on the actual process followed or the models used to guide the process. Qualitative and quantitative findings such as the example of Case Western Reserve’s Weatherhead School of Management with its systemic shift of focus from content to learner, provide a valuable contribution to the literature of curriculum development in professional education. The work of Stark and Lowther (1986) that identifies categories of professional competencies and the role of professional preparation programs provide evidence for another component of the research question, although their work is now over a decade old. Fisher and Levene’s (1989) work acts as a general primer for higher education by explaining teaching and learning theory for professional program curriculum development, although their work is based on experience in a faculty of medicine.
Few examples of how the aims and responsibilities of professional education relate to curriculum development are available. Given the importance of a professional faculty's responsibilities to both the profession and the society it serves, further research into how curriculum development incorporates the responsibilities of professional preparation in the current academic and economic environment is required.

Further reporting of this case study's findings (i.e., information on the Faculty's website; contribution to ALISE literature and discussions, contribution to literature on higher education) would also serve to extend the discourse on curriculum development in graduate professional education.

In an emerging discipline where the convergence of competencies from separate fields of study and the demands of society for a new approach to practice challenge the foundation of a traditional profession, the process of curriculum development requires considerable planning. Theory and practice provide a direction for process. However, successful development relies on the abilities of the curriculum developers to choose an innovative approach. The community of researchers working in curriculum development in higher education, professional preparation, and information studies education will benefit from reports on the successes and failures or the strengths and weaknesses of individual projects. Analysis of a wide range of projects is required in order to build the theoretical framework on which other curriculum development projects in graduate information studies can be based.

Significance of the Research Findings and Conclusions

The significance of my research findings presented in Chapter 4: Findings and the conclusions suggested in this chapter parallel the purpose that I identified for this case study of a curriculum design process in a graduate information studies program.

First, I propose a curriculum design process model that reflects the environment of information studies where a specific curriculum problem had been identified. Although no two curriculum development initiatives will ever be exactly alike, this design process model serves as a starting point for subsequent curriculum design initiatives at the Faculty and in other faculties of information studies. As well, the model serves as a reference for curriculum development in other professional faculties. Just as I synthesized the basic components of three frameworks in order to develop a framework for the PDAC process, this design process
model can be used in other situations, particularly where the discipline is evolving and the faculty is committed to the aims and responsibilities of professional education.

Second, this case study provides a critical analysis of a curriculum development project in higher professional education. By explaining the development of a design process model, I provide an account of a curriculum design team's process. As an example of one approach, one application of general principles to a specific situation, this case study follows in the tradition of qualitative research studies that seeks to leave a record of a particular event. The outline of challenges to the curriculum initiative, lessons learned, and opinions on the components of a design process provide curriculum development teams with additional elements to consider when planning and evaluating their process.

Third, my reflections on the role of the committee's facilitator contributes to understanding this function as a member of a multilayered curriculum development team and provides an example of reflective activity as a means of furthering personal learning.

**Summary**

Although the primary purpose of this research study was to develop a model that reflected the curriculum design process, developing a procedural model was not enough to tell the whole story of how the PDAC designed a new curriculum. The ten-month design project was a complex initiative, and like an onion, the layers needed to be peeled away to understand the composition of the whole object. The model of a curriculum design process on its own only addressed the procedure -- the steps that the PDAC took to reach the end, the prescriptive path followed to achieve a goal.

The graphical representation of the design model in the form of a workflow diagram needed further explanation. A table supplemented the representation of the process by identifying the key actions attached to each phase of the process, the information that was needed to inform decision-making, and the materials developed to record directions. How the work was completed was described by discussing what the team actually did in terms of actions, inputs, and outputs at each step as they continued through the design process.

In analyzing the process and the description of its application, new concepts that related to the successful completion of a curriculum design were identified and further reflection on the case study results personalized the learning, providing possibilities for
expanding the research program on the nature of curriculum development in graduate professional education.

This case study of a graduate information studies faculty's curriculum design team's efforts to design the content, context, and form of a new program, provided me with the opportunity to develop a process model that graphically and narratively represents the steps that were followed to solve a curriculum problem, to describe what the design team did in terms of the actions, inputs, and outputs that characterized how they accomplished their goal, and to identify the elements and their relationships that constitute a curriculum design process.

*The Information Studies Curriculum Design Model* represents a design process in three phases: *project definition* — stating the curriculum problem and outlining a structure for finding a solution; *solution design* — researching possible solutions, selecting a direction, and defining the components of a program; and *solution presentation* — identifying the audience and purposes, preparing or packaging information about the solution, and presenting the findings. The five key processes identified in the design model are characterized by the *actions* that move the process toward its goal, the *inputs* that are required to make decisions, and the *outputs* that represent the choices made. The design model also recognizes the significant influence that the *aims and responsibilities of professional education* and the *process of creating meaning* had on the design process.

With the development of *The Information Studies Curriculum Design Model*, I sought to establish a framework that could be a guide for further curriculum design initiatives at the Faculty. In addition, this design process model could be used as a starting point for establishing frameworks for other faculties of information studies planning curriculum development projects or used as a reference in the planning efforts of professional faculties in other disciplines.

This design process model with its accompanying description, critical analysis, and reflection represents my research efforts to explore the nature of the design phase of curriculum development in graduate professional education — the approach, the steps, the resources, the challenges, and the influencing factors as elements that work together to design a solution to a curriculum problem. This research supports an approach to curriculum development where a synthesis of frameworks and a customization of curriculum development models are necessary in order to address the unique characteristics of any given
curriculum problem’s environment. The findings also identify the significant role that the aims and responsibilities of professional education play in developing curricula for professional preparation programs.
References


Appendices
## Appendix A-1
### The Faculty’s Change Time Line

<table>
<thead>
<tr>
<th>YEAR</th>
<th>CHANGE TYPE</th>
<th>ACTION/CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>Degree/Certificate</td>
<td>Masters of Library Science Degree first granted (MLS)</td>
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<tr>
<td>1971</td>
<td>Degree/Certificate</td>
<td>Ph.D. Program introduced</td>
</tr>
<tr>
<td>1972</td>
<td>Name</td>
<td>Faculty of Library Science</td>
</tr>
<tr>
<td>1982</td>
<td>Name</td>
<td>Faculty of Library and Information Science</td>
</tr>
<tr>
<td>1988</td>
<td>Degree/Certificate</td>
<td>Masters of Information Science Degree added (MIS)</td>
</tr>
<tr>
<td>1990</td>
<td>Curriculum/Program</td>
<td>Curriculum Review Process begins</td>
</tr>
<tr>
<td>1993</td>
<td>Planning/Review</td>
<td>Student survey implemented</td>
</tr>
<tr>
<td>1994</td>
<td>Curriculum/Program</td>
<td>Special program in Culture and Technology joins the Faculty</td>
</tr>
<tr>
<td>1994</td>
<td>Name</td>
<td>Faculty of Information Studies</td>
</tr>
<tr>
<td>1995</td>
<td>Administration</td>
<td>New Dean appointed</td>
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<tr>
<td>1995</td>
<td>Degree/Certificate</td>
<td>Masters of Information Studies Degree (MIS) replaces MLS and MIS degrees</td>
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<td>Curriculum/Program</td>
<td>Collaborative Studies programs offered (4)</td>
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<tr>
<td>1996</td>
<td>Planning/Review</td>
<td>Academic Plan accepted</td>
</tr>
<tr>
<td>1996</td>
<td>Planning/Review</td>
<td>ALA COA Review</td>
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<td>1996</td>
<td>Curriculum/Program</td>
<td>Partnership with a knowledge media centre</td>
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<td>1997</td>
<td>Curriculum/Program</td>
<td>CE Courses offered via Internet and video conferencing</td>
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<tr>
<td>1997</td>
<td>Degree/Certificate</td>
<td>Internet &amp; Business Technology Certificate in CE</td>
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<td>1997</td>
<td>Support/Cur.</td>
<td>Library reconfigured to information lab</td>
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<tr>
<td>1997</td>
<td>Administration</td>
<td>Reorganization of student and administrative services</td>
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<td>1997</td>
<td>Curriculum/Program</td>
<td>Investigation of “Telematics” program begins</td>
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<tr>
<td>YEAR</td>
<td>CHANGE TYPE</td>
<td>ACTION/CHANGE</td>
</tr>
<tr>
<td>------</td>
<td>------------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>1997</td>
<td>Curriculum/Program</td>
<td>Flextime Ph.D. program introduced</td>
</tr>
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<td>1998</td>
<td>Curriculum/Program</td>
<td>Program Development Advisory Committee struck</td>
</tr>
</tbody>
</table>
Program Development Advisory Committee Goals and Objectives

Introduction:

The Faculty in its *Academic Plan (1995-2000)* has committed to explore the possibility of establishing an advanced-level program to meet the demands of information and knowledge management professionals. In section 4, *Vision for the Future: The Faculty in the Year 2000*, a “place holder” for programmatic development was included as section 4.2.1.3 (pg.22).

Implementing change at the Faculty is not new. Over the last 25 years, the Faculty has seen constant, substantive change in its name, curriculum, course content, and student profile. Many library and information science/studies schools in North America continue to focus on curriculum modifications which reflect the impact of computer and telecommunication technologies on information professions. However, the Faculty is preparing to take a further step in designing a unique program possibly for the more experienced professional who may already have an undergraduate and/or graduate degrees and requires specialized, advanced competencies in order to manage the job demands in the changing information and knowledge environments.

In essence, the *Academic Plan (1995-2000)* is sending a signal that although substantive change has already taken place at the Faculty, there is more work to be done in the area of curriculum and program development. The role of the advisory committee, which is made up of faculty and leaders in the information professions, is to provide guidance to the Dean by submitting a report of recommendations on possible directions for continued development.

Advisory Committee Goal:

Prepare a report with recommendations regarding the direction the Faculty should take with the possible development of a new program of study as outlined in the Faculty *Academic Plan (1995-2000)*.

Advisory Committee Objectives:

1. Review the existing trends in the information professions and propose how these trends might change or continue in the future.

   *What kinds of demands (knowledge and skills) are being made on these professionals in the workplace? What kinds of activities must they perform in order to meet the*
information demands? What will be needed for the future as knowledge demands and changes in technology continue to evolve?

2. Profile the student/participant at the end of the program.

What competencies (knowledge and skills) will the student/participant have at the end of the program? How might the student/participant be employed? What kind of employers will be attracted to this person's competencies?

3. Outline a program of courses which will provide existing information and knowledge management professionals with the competencies required by the workplace.

What courses (content) would be required to provide information professionals with the knowledge and skills to meet the demands of their workplace? In what sequence should these courses be offered? Will the curriculum culminate in a graduate degree, a certificate, a diploma? Or, is it a continuing professional development experience? Is there the possibility of a collaborative program with other faculties within the university or with other institutions of higher learning?

4. Outline the characteristics of the proposed program.

What would the program look like from a logistical point of view (e.g., location, scheduling, program administration)? What would the prospective student/participant look like? What would attract students to the program?

5. Recommend a general teaching and learning style and methodology which would best accomplish the program's objectives.

Is there a teaching/learning approach which should be followed (e.g., experienced based learning; student centred learning; etc.)? What would be the most effective method of delivery (e.g., lecture, team problem solving exercises, distance education methods, etc.)

6. Create a financial model in the form of a business plan which outlines how The Faculty would implement the proposed recommendations.

Given the funding directions of the University, how would the Faculty obtain the resources necessary to design and implement a new program? What sources of funding might be available to initiate the design process and support the program's implementation, maintenance, and growth over the first 3 years?
Appendix A-3
PDAC Report of Recommendations
Table of Contents and Executive Summary

Table of Contents

Introduction to the Report

Section I. Recommendations of the Program Development Advisory Committee

Part I. Executive Summary

B. Background
C. Process Overview
D. Recommendations
E. Opportunity Analysis
F. Key Benefits
G. Program Organization and Design
H. Critical Success Factors
I. Summary

Part II. The Curriculum Development Process

A. The PDAC Structure
B. Process Framework
C. Data Gathering Methods
D. Operational Plan

Part III. Analysis of Information Gathered

A. Identifying the Educational Needs
B. Directions in LIS Professional Education

Part IV. Recommendations for Program Directions

A. General Recommendation
B. Specific Recommendations

Part V. Business Plan

A. Opportunity Analysis
   1. Program Opportunities
   2. Key Benefits
B. Market Analysis
C. Portfolio of Programs Design
1. Program Components
2. Organizational and Governance Structure
3. Strategic Partnerships
4. Critical Success Factors
5. Program Distinctions
6. Institute Outline
D. Financial Analysis
E. Implementation Plan Outline
F. Communications Plan Overview

Part VI. Summary

Section II. The Curriculum Development Process

Part I. Elements of the Curriculum Design Model

A. Elements of the Design Framework
B. Program Design Components
C. Additional Elements to the Design Framework

Part II. Reflections on the PDAC Curriculum Design Process

A. Questions to Committee Members
B. PDAC Member Responses
C. Reflections of the Committee Chairperson
D. Reflections of the Committee Facilitator

Appendices

A. Data Gathering

1. Activities
2. Tools
3. Participants

B. Data Analysis

1. Coding key
2. Mtg. #1 - Participant Profile
3. Mtg. #2 - Focus Group
4. Email survey
5. Dean's Advisory Board
6. Mtg. #3
7. Alumni Survey
8. Interviews
C. Analysis of Educational Opportunities
   1. Canadian LIS schools
   2. Related Programs to LIS - Ontario
   3. Competitive Analysis - Institutes
   4. Executive Education Providers
   5. Selected Web Site Addresses

D. Program Organization and Design
   1. Program Portfolio Structure
   2. Governance Information

E. Support Information
   1. Definitions
   2. The Faculty Development Profile
   3. Knowledge Management Principles
   4. Selected References
Executive Summary

A. Background

In the Faculty’s Academic Plan 1995-2000 under Section 4.2.1 - Program Development, an initiative was established to explore the possibility of creating a self-supporting, graduate level program to meet the changing needs of information professionals, specifically in the area of telematics. Funds were received from the Provost’s Office to support an analysis of the opportunities and issues associated with developing a new program and to make recommendations for a program’s development.

B. Process Overview

In accordance with the Faculty program development procedures, an advisory committee structure was chosen to analyze the educational need and formulate recommendations. The Dean hired an external consultant to help plan the curriculum development process as well as facilitate the advisory committee. Prof. X was appointed committee chair. The Program Development Advisory Committee (PDAC) was formed and included: four faculty members; one faculty Ph.D. student; one provincial government senior manager; one corporate librarian; one academic librarian; and, one director of research and development from the private sector. Several members were also alumni of the Faculty.

The Committee started its work with: a review of the literature on library and information science education, information and knowledge management in organizations, and information industry competencies; an analysis of current advanced educational opportunities; and, a discussion of the needs gap of information professionals and the role of the Faculty as a provider of advanced education.

A second group of specialists and leaders in the information industry was identified as a resource level of key informants to the Committee. This group included human resources managers, information industry product and services executives, records management and archives specialists, information consultants, representatives of professional and industry associations, and librarians from a range of library types. Information from the resource level was obtained through email surveys, focus group discussions, and individual interviews. The PDAC also surveyed a selected group of the Faculty alumni.

A series of options per program design component was compiled based on an analysis of the research data collected and the opinions of the PDAC members. The basic elements included possible target audiences, learning objectives, curriculum content directions, and program design structures. The options in each element were then narrowed to provide a focus for a series of recommendations. In addition, the PDAC developed an outline of the differences
between the existing Masters of Information Studies Program Degree (MIST) and the proposed new curriculum. A glossary of terms was established to ensure a standard definition of the vocabulary used throughout the report.

C. Recommendations

Based on a review of the literature and the analysis of the PDAC's research, the Committee submits the following recommendations for the Dean's consideration.

General Recommendation:

Given the analysis of evidence collected by the Program Development Advisory Committee (PDAC), the Committee recommends that the Faculty develop a portfolio of programs which will provide advanced professional training with appropriate credentials for mid-career information professionals, information system and information technology (IS/IT) professionals, and management professionals. The programs' curricular focus should be based on the principles and concepts of knowledge management and should be offered in a modular, flexible structure which includes a case-based problem-solving approach. The goal of the programs would be to provide educational opportunities for professionals who require a comprehensive range of competencies in the area of knowledge management in order to effectively contribute to organizations in a global, technology-enabled, knowledge-based economy.

Specific Recommendations:

The Faculty should:

1. Develop a portfolio of programs which addresses current issues in knowledge management and meets the needs of a diverse range of information and management professionals.

2. Establish goals for the program which include:

   2.1 To educate information professionals, IS/IT professionals, and management professionals responsible for or interacting with information and knowledge process initiatives providing them with the competencies to anticipate and respond to the dynamics of information and the changing needs of their organizations.

   2.2 To contribute, through teaching, research, and publication to the continuous development of the field of knowledge management and the role of information technology as an enabling tool.

   2.3 To participate in the development of the theory and concepts of information and knowledge processes defined as a continuum of activities related to information as content with an emphasis on the creation phase and the use phase as well as the enabling role of information technology.
2.4  To provide leadership in defining policy, procedures, and practice for the ethical and responsible use of knowledge in organizations and society.

2.5  To assist information professionals and management professionals in broadening their competencies in a manner consistent with life long learning goals and the need to progress with the changing information and knowledge environment.

2.6  To increase liaison with government, industry, the public sector, and related professions in order to expand the opportunity to collaborate with disciplines and sectors which converge in the provision and use of information and knowledge processes and services.

3.  Within the portfolio of programs, develop programs for three professional groups who share a common goal (the effective creation, management, and use of information and knowledge), but who also have separate objectives for their continued education. These groups include: Information Professionals; IS/IT Professionals; and, Management Professionals.

4.  Establish a series of learning outcomes which reflects an advanced degree of depth in competency as required by senior professionals in the following four areas:

4.1  Knowledge of the evolving information technology and knowledge management environment within an organization's design. The social and political trends, attitudes, and culture which sustain and evolve the knowledge management and information technology environment.

4.2  Knowledge of the creation, use, and management of information and knowledge as strategic processes within the organization. The operational and architectural components of the content and technology which form the components of the knowledge management process.

4.3  Ability to design and implement knowledge management strategies in order to facilitate the effective use of knowledge for constructing meaning, creating new knowledge, and decision making. The skills required to analyze needs, design solutions, and implement the change in order to create a process where knowledge can be strategically used within the organization.

4.4  Development and enhancement of management and leadership skills. The abilities and skills which support the role of the professional such as leadership skills, team skills, change management, project management, effective communication and presentation, and human resources management.

5.  Within the portfolio of programs, there should be a core of three content streams which would be applied, as appropriate, in the development of each
program’s curriculum. The content areas are: Information Management; Organizational Management; and, Knowledge Management.

6. Create a structure for each of the programs in the portfolio which reflects the learning needs of advanced, mid-career professionals.

7. Within the portfolio of programs, provide a range of credentials which includes: a continuing education Certificate in Knowledge Management, a Post-Graduate Diploma in Knowledge Management, and an Executive Masters Degree in Knowledge Management.

8. Utilize a variety of professionals to teach in the portfolio of programs who have an expertise in the principles and concepts of information and knowledge management. This expertise may have been acquired through recent experience working in the field as a focus area of research or as the basis of employment responsibilities. The programs’ “faculty” should be comprised of a combination of: The Faculty’s faculty; The Faculty’s adjunct professors; faculty from other University departments, programs, centres, or institutes; and, experts and practitioners.

9. Form strategic partnerships in order to provide resources (staff and material), curriculum development planning, funding support, and/or cooperative research activities. These partnerships would take the form of a collaboration with various faculties, industries, and organizations as appropriate to the particular program content focus (e.g., law faculty and information policy issues).

10. Encourage the continued contribution to the development of theory and practice concerning knowledge management through research activities.

11. Establish appropriate financial models to develop and enhance the portfolio of programs through a combination of student tuition, industry sponsorship, foundation sponsorships or grants, government grants, and/or University funds. There should be the option of designing any given program as either self-supporting or revenue generating.

12. Validate the proposed new program directions, its curriculum components (content, design structure, methodology), and the target market (information professionals, IS/IT professionals and management professionals) in a practical approach by offering an institute.

D. Opportunity Analysis

Introducing a new portfolio of programs is not without risk; however, based on the opinions of the key informants and the environmental trends, the Committee believes that the
opportunities far out weigh the risks. The Faculty is extremely well positioned to succeed due to a unique situation created by a combination of the following opportunities:

1. **Development of knowledge management as a recognized process and a field of study.**

Organizations recognize the value of managing the intellectual capital of their employees. Using the technology infrastructures which have now become almost common place, managing information and knowledge for a competitive edge (which also translates to better service in the public sector) through access to information and the communication of knowledge is emerging as a priority for government and all sectors of the economy.

2. **Government Initiatives**

The Federal Government’s mandate to “Connect Canadians” is a strong signal to the education community of a programmatic direction which relies heavily on the competencies of information professionals.

3. **Mid-Career Educational Programs Combined with Mid-Career Job Challenges**

Traditionally, professional preparation was offered as an entry or introductory level degree program. With the introduction of the Executive Masters of Business Administration (EMBA), universities recognized the educational needs of professionals who were beyond entry level positions functioning as middle to senior managers and executives. In addition, many information professionals were trained in a somewhat single-focused program which may not have provided the wide range of competencies required to meet the more complex needs of their positions in an information-rich, technology-enabled, knowledge-based economy.

4. **Attitude Toward Continuous Learning**

There is a strong commitment to continuous learning by information professionals as seen in the survey of the Faculty alumni (1983-1988), the growing continuing education market, and the strategic advantage realized through further education and training in both private and public sector organizations.

5. **Technology Trend Toward Content Focus**

For the most part, computers are now common place in organizations and are no long seen as “distinguishing” an organization or providing a competitive advantage. While information professionals still identify “keeping up with technology” as a major challenge in the workplace, there is a trend toward content (i.e., the creation, management, use of knowledge and information) as the focus, with technology as the “enabling” infrastructure.
6. **Evolving LIS Environment**

Library and information science professional preparation schools are undergoing continuous change. Expanding from a library-only focus to encompass a wider range of information studies and information systems, many schools are designing programs which are based on a convergence of library science, archival studies, and records management combined with a focus on the enabling technology. There is a great deal of activity in curriculum development across North America as schools prepare themselves for providing the next generation of information and knowledge management professionals.

7. **The Faculty Strategic Direction and Research Expertise**

The Faculty is a recognized leader in the LIS educational community for continuous development of its direction and corresponding programs. A foundation of expertise in teaching and research in the area of information science has been established at the Faculty with extensive work in information organization, management, and the enabling technology. In addition, the Faculty has emphasized study of the user in the form of information seeking behaviours and use of information by individuals, groups and institutions. With a unique combination of expertise in information resources, processes, and culture, the Faculty is well positioned to progress to the next logical step in the information taxonomy to address the issues and challenges of a new program in knowledge management.

E. **Key Benefits**

With the development of a new series of programs on knowledge management, the Faculty will realize key benefits which are directly related to the new programs as well as comprehensive benefits to the Faculty. The Faculty will strengthen its position not only within the LIS educational community, but within the University and with its strategic partners.

1. **Extend Range of The Faculty Offerings**

Using the metaphor of "bookends", this new portfolio of programs provides programs at the "beginning" of the continuum with a focus on pre-production or pre-process activities (i.e., planning, design, creation, and production) and then to the "end" of the continuum with a focus on the application or use of information and knowledge (i.e., analysis, synthesis, and presentation). These components would be centered around the current MISt information management direction (i.e., acquire, organize, store, retrieve, disseminate, preserve).

2. **Attract New Range of Students**

The student "target markets" identified in the recommendations would bring a mid-career, often middle to senior management professional to the Faculty. In addition, there would be an increase of management professionals bringing yet another level of diversity to the Faculty student body.
3. Attract Leading Researchers in Knowledge Management and Information Studies to The Faculty

Knowledge management as a field of study is just emerging. While its foundation comes from information management and information systems, the focus on information creation and use extends the core of information studies. By creating a focus on knowledge management, the Faculty has the opportunity to attract leading researchers and practitioners who would benefit from the immersion in the field of study.

4. Continue The Faculty’s Leadership Role

This aggressive plan which recommends a new student market, a new teaching and learning methodology, a new content direction, and a new program structure would put the Faculty at the forefront of educational providers for information professionals. The introduction of a portfolio of programs with such a comprehensive range is unparalleled in any North American academic institution and represents significant growth within the University. The Faculty is uniquely positioned to create a new series of programs on knowledge management. This new direction builds on the Faculty’s existing expertise in the areas of information organization, management, and the technology which enables these processes.

5. Expand Strategic Alliances

With the growing concern regarding the availability of information professionals, all sectors are increasing their activities with universities in order to ensure continued growth of programs both in the number of students enrolled and in the direction of program content. The Faculty has the opportunity to expand its strategic partnerships with organizations through program development activities, funding, and professional development and training.

6. Strengthen MISs Program

By increasing the Faculty’s portfolio of programs with a series of knowledge management focused programs, the MISs Degree Program stands to benefit from increased resources available within the Faculty. In addition, the increased exposure of the Faculty within the information industry sectors helps market the competencies of MISs graduates resulting in possible increased employment.

F. Program Organization and Design

The Faculty currently supports a complex organizational structure for the size of the faculty. Funding for the Faculty programs is also multi-dimensional. The PDAC recommended additions to the Faculty’s portfolio of programs include: a self-supporting executive masters degree program, a post-graduate diploma, and a revenue-generating continuing education institute which would be held across Canada. There are two options for incorporating these program components into the Faculty structure: integrating with the existing structure -- organizing by credential or program type; and, establishing a separate structure -- organizing by content direction.
G. **Critical Success Factors**

As in any venture, there are certain elements which are critical to the success of designing and implementing this recommended portfolio of programs. Due to the aggressive nature of these recommendations, the Committee suggests that there are two phases to the development. First, the Faculty needs to present a vision to its stakeholders which articulates an expanded direction for the Faculty. Once the support of the stakeholders is in place, the actual design and implementation phases present their own series of factors.

1. **Program Vision Development**

1.1 **Engage Stakeholders in Program Direction**

The Committee recognizes the aggressive nature of the series of recommendations. By "aggressive", the Committee means that a significant change in direction should occur in order to establish a new program content, design, and delivery which translates into the need for substantial resources. Central to the success is early "buy-in" from the various stakeholders in the form of support in-principle which must then translate into support in funding the initiative (i.e., direct dollars and in kind services and resources). The strategy must be planned by the Dean; however, the Committee highlights the need to begin working with the Provost who has already supported the research into program directions, the faculty who will be shortly drafting a new Academic Plan, the Faculty Council, and employers — especially those who have already expressed an interest in helping to develop the faculty.

1.2 **Establish Program Development as a Faculty Priority**

The Faculty's commitment to continuous program development is evident in its strategic planning documents. However, the Faculty will need to focus its energies on developing in a new direction — an effort which the Committee realizes is a significant undertaking. As such, establishing a new program direction must be identified as a key priority of the Dean and those involved in the planning. This priority should be broadly communicated within the Faculty and the community.

1.3 **Successful Implementation of an Institute**

The creation of an institute on knowledge management would function as a test or "proof-of-concept" for not only the programs’ content direction, but would also provide valuable information on the acceptance by the target market of the programs’ direction, design, and delivery.

1.4 **Strategic Alliances**

Given the expansive nature of the recommendations, it will be imperative that the Faculty expand and strengthen existing alliances. The obvious benefit from these alliances is sponsorship through funding in order to implement the programs. However, of equal importance is the need to establish credibility for the new program.
2. **Program Design and Implementation**

Once the support of the Faculty stakeholders is secured, the curriculum development project can move into the design and implementation phases. Critical to the success of the program, in general terms, is the ability to create a high-quality program which meets the needs of its participants and their existing or prospective employers.

2.1 **Progressive Curriculum Development Team**

The quality of the program is heavily dependent on the output of the curriculum development team. As such, great care should be taken in creating a team which represents a wide range of both expertise and interests. In addition, the team members must be goal-oriented, clear in the purpose of the program direction, and committed to the timely development of the program.

2.2 **Centre Program on the Learner**

In keeping with one of the central educational purposes of professional preparation, the programs' focus must centre on the learner -- the learner's objectives for continued education; the content to address skills gaps; the practical, relevant application to current job situations; the strengths and expertise available in peer learning; and, the program structure and delivery to accommodate individual learning and life styles.

2.3 **Recognized Credibility for Program and Credentials (Branding)**

As noted in the evolution of LIS education, even with concerted efforts to address image, information professionals, as a whole, are not immediately recognized as innovative management leaders for organizations outside of the library community. With two-thirds of the target market OUTSIDE of the LIS community, it will be critical for the program to establish credibility for both the content direction and the resulting credential.

2.4 **Leading Edge Instructors**

The program must attract outstanding instructors who are committed not only to excellence in teaching, but in furthering the research in the field of knowledge management. A combination of relevant, practical expertise and an ability to challenge and stimulate the programs' participants in creating innovative solutions to their knowledge management issues will be required to attract students and sponsorships and contribute to establishing credibility and branding.

2.5 **State-of-the-Art Facilities**

Given that technology plays such a central enabling role in the process of information and knowledge management, that same technology should be incorporated in the delivery of the program. Whether the programs are delivered via web-based instruction, teleconferencing,
classroom lecture, or a combination of methods, the facility must be able to support the latest developments in technology.

2.6 Aggressive Communication Strategy

A commitment of resources to an aggressive communication plan will be required to attract participants and sponsors as well as to establish credibility of the programs. Competition for executive management training participants continues to intensify and the Faculty must have a significant, visible presence.

2.7 Minimal Time to Market

A leader in the provision of knowledge management competencies for information, IT/IS, and management professionals has yet to be recognized. However, the window is relative small for the Faculty to stake its claim to this leadership role. There must be an aggressive time frame for the program development in order to bring the program to the implementation phase within the next 12 - 18 months.

H. Summary

The PDAC recommends that the Faculty should pursue the development of a comprehensive range of programs with corresponding credentials in order to meet the diverse needs of the wide variety of professionals who are either designing, implementing, and/or managing information and knowledge management processes.

The PDAC recognizes that the list of recommendations represents an extremely bold initiative for the Faculty, an aggressive undertaking which may at first appear to have been made without consideration of the resource implications necessary to implement such a portfolio of programs. However, by following the program development direction as articulated by the University and partnering with other faculties, various levels of government, as well as public and private sector organizations, the Faculty has the opportunity to facilitate a collaborative venture which will be both a model within the University and to the rest of the LIS educational community.

Two fundamental questions could be asked of the PDAC — Why knowledge management? And, Why the Faculty? Central to the Faculty’s mission is the commitment to be an internationally significant Faculty which provides excellent professional education based on an understanding of the theory and practice underlying information generation, organization, and use, and to the stimulation and dissemination of research. As a recognized leader, the Faculty takes the next logical step in the information taxonomy with a proposed program focus on knowledge management. With a foundation of expertise in the areas of information resources, management and use processes, technology infrastructures, and the corresponding societal factors, the Faculty is uniquely positioned to continue its development in support of the evolution of the field of information studies and our nation’s information and knowledge use.
The Committee strongly encourages the Dean to build on the Faculty's history of progressive curriculum development and its recognized leadership role in providing innovative professional education. The Faculty, along with the University, has the unique opportunity to create a new level of professional education by facilitating an unprecedented collaboration amongst a diverse range of organizations which will prepare information and knowledge professionals to be at the forefront in designing the foundations for our emerging knowledge-based society.
The Faculty’s Program Development Advisory Committee
The Nature of Curriculum Development

Curriculum: A Definition

“a course of study” to “everything that occurs under the auspices of the school”

“a slippery concept, a weasel word” - Tomkins

“an explicitly and implicitly intentional set of interactions designed to facilitate learning and development to impose meaning on experience” - Miller and Seller

“what can and should be taught to whom, when, and how” Eisner and Vallance

Curriculum Models

Design Principles (Boyatzis et al.)

- Adopt an outside-in perspective
- Build on the seeds of vision and strategy that lie within
- Develop a collaborative attitude
- Challenge convention and tradition
- Focus on substance rather than form
- Provide multifaceted leadership

Design Considerations (Dressel)

“Discussions of curriculum too often are preoccupied with means rather than ends, with details rather than structure, and with courses rather than learning.”

What students shall we educate?
To what end shall they be educated?
What constitutes the materials and means of instruction?

Design Model Characteristics (Diamond)

- Think in the ideal
- Show structure through diagram
- Gather data
- Use a team
- Be politically sensitive
- Avoid preconceived notions
**Curriculum Models**
Dressel (1971)

<table>
<thead>
<tr>
<th>Model</th>
<th>Assumptions</th>
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</table>
| Dewey Eyed             | - All learning is individual and problem-based;  
                        - Knowledge is worthwhile only if used to solve problems;  
                        - Education is life and must be a multifaceted experience;  
                        - Sequence and integration are individual problems and cannot be planned for groups.                                                    |
| "Saintly" Conception   | - Significant truth and value have been discovered by the great minds of bygone ages;  
                        - Education consists of bringing students into contact with these ideas;  
                        - Development of the mind through dialectic and mastery of existing integrations of scholars constitutes the goal of education;  
                        - Education is for an intellectual elite.                                                                                                       |
| Pedantic Pattern       | - The major disciplines represent the best effort of man to date to organize knowledge and to systematize the task of seeking new knowledge;  
                        - Since no one can master all knowledge, one or two disciplines should be chosen for intensive study with appropriate attention to related or supporting fields that may be useful in mastering the chosen ones;  
                        - In deference to the liberal arts tradition, some contact with most or all of the broad groupings of disciplines should be required, but real understanding of other disciplines can occur only when a single discipline is pursued;  
                        - Only after a discipline has been mastered should one consider the practical implications of the discipline or explore its individual and personal implications;  
                        - Since professors are the masters of the disciplines, they are best equipped to determine the college curriculum. |
| Narrowly Vocational    | - Vocational education should focus on the development of knowledge and skill necessary for specific tasks or to solve specific problems;  
                        - Any vocational area includes a number of subspecialties, so that the vocational program should encourage students to achieve some core experience as well as a high level of vocational competence in one subfield;  
                        - The various disciplines of the arts and sciences are relevant only if they provide knowledge and skills that are required in performing vocational responsibilities. |
<p>| Outreach Model         | - If the college is to affect life, then the college experience must encompass &quot;real life&quot; experiences and encourage the student to interrelate them.                                                                 |</p>
<table>
<thead>
<tr>
<th>Model</th>
<th>Assumptions</th>
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<tbody>
<tr>
<td>Single Module Plan</td>
<td>-Education will become more meaningful if the students can concentrate for periods of time on one area of study and penetrate deeply rather than flitting from one to another as most programs require.</td>
</tr>
<tr>
<td>Theme College</td>
<td>-Identifying major social issues or problems and using them as themes will achieve relevance, manifest the social responsiveness of education, and force both students and faculty to integrate disciplines with each other and with social problems.</td>
</tr>
</tbody>
</table>
| Individual Tutors | -All learning is individual and is effectively carried on only when the individual (student or professor) pursues his own developing interest in whatever way seems most attractive to him;  
|                | -Some human interaction is necessary to promote learning.                                                                                      |
| Integrated Model | -Learning requires a varied array of experiences;  
|                | -The student requires help in choosing among these experiences;  
|                | -The diverse experiences must be highly structured so as to offer distinct alternatives.                                                           |
| Elective Model  | -The mastery of knowledge is the major goal of education;  
|                | -Students must have the freedom to define both the knowledge that they desire and the particular mode by which it is pursued.                  |
| Flexibly Rigid Model | -Good education results when able and highly motivated students are brought together with a like group of teachers.                            |
### Curricular Patterns for Professional Education

**Fisher & Levene (1989)**

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Structure</th>
<th>Learning</th>
<th>Teaching</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Separate Disciplines</strong></td>
<td>Content organized in accordance with the disciplinary divisions of research or practice</td>
<td>Student must master structure of the discipline and corresponding models of thought</td>
<td>Emphasize understanding, explanation and description (e.g., reading books, listening to lectures)</td>
<td>Traditional approach; known by most teachers; common glossary between theorist and practitioner</td>
<td>Learning is compartmentalized; arrangement and sequence may be inefficient; most research is interdisciplinary</td>
</tr>
<tr>
<td><strong>Broad-Fields</strong></td>
<td>Related concepts from various disciplines studied together</td>
<td>Identification of themes or issues irrespective of curriculum boundaries</td>
<td>Unifying concepts or relationships identified; devices invented for combining e.g., case method</td>
<td>Broad concepts suitable for generalist education; Learn subject matter by virtue of its focus</td>
<td>Broad knowledge of many disciplines required; topic at hand may have to be over simplified</td>
</tr>
<tr>
<td><strong>Problem-Oriented</strong></td>
<td>In order to tackle the problems of the area, have to learn the facts, concepts, etc of the area.</td>
<td>Problems selected so that a defined content area will be covered to solve</td>
<td>Assist students to improve their skills in defining problems, assessing problems, developing alternative solutions, applying and understanding consequences</td>
<td>Perceived by student as being relevant; students grow into professional responsibility which eases transition to future role</td>
<td>Not all subject matter amenable to problem definition; artificial situations can result; considerable skill required in course design</td>
</tr>
<tr>
<td>Pattern</td>
<td>Structure</td>
<td>Learning</td>
<td>Teaching</td>
<td>Advantages</td>
<td>Disadvantages</td>
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<tr>
<td>Competency Based</td>
<td>Ability to generalize learned skills, abilities, attitudes, and values</td>
<td>Learning is determined by lists of competencies (e.g., interviewing skills practiced; residency program)</td>
<td>Provide detailed, constructive, on-site feedback regarding performance</td>
<td>Competencies become operational as objectives; needs defined as professional shortfalls</td>
<td>Can lose sight of the knowledge required behind competency; difficult to maintain standards between students; costly in staff resources; students need clear professional goals</td>
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<tr>
<td>Student Oriented</td>
<td>Programme determined by the needs of each individual student</td>
<td>Variable and flexible to meet student needs (e.g., private tutorial)</td>
<td>Variable and flexible to meet student needs (e.g., private tutorial)</td>
<td>Immediate personal and relevant learning; considerable motivation</td>
<td>Unlimited resources required</td>
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Appendix A-5
PDAC Work Plan and Milestones

Phase I - Planning

January/February
Develop functional specifications and guidelines for committee
Draft project plan
Appoint committee chair and members
Committee meeting no. 1 - mandate, objectives, process framework, time line
Plan data gathering activities

Phase II - Data Gathering

March
Plan focus groups
Prepare questionnaire and interview script
Identify study participants

April
Administer email survey
Begin interviews
Committee meeting no. 2 - issues and opportunities; target audience, content, structure

May
Develop alumni survey
Continue interviews

June
Administer alumni survey
Continue interviews
Begin site visits

Phase III - Data Analysis

July
Synthesis of key elements from surveys, interviews, and visits
Continue interviews
Committee meeting no. 3 - discussion list of components, program direction and distinctions

Phase IV - Formulation of Recommendations

August
Complete interviews
Draft general and specific recommendations for discussion
Draft program distinctions
Begin report outline

September
Prepare draft of report elements
Meeting no. 4 - discussion of recommendations
Finalize draft report, review, revise
Submit final report to Dean at Meeting no. 5

Work Plan

<table>
<thead>
<tr>
<th>Objective</th>
<th>Activity/Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review the Faculty Profile; Understand Educational philosophy</td>
<td>1. Review various documents; academic plan, ALA accred. Presentation; Provost white paper; MIST revision, etc.</td>
</tr>
<tr>
<td>Create a profile of stakeholders and gatekeepers</td>
<td>1. Review various The Faculty resources</td>
</tr>
<tr>
<td></td>
<td>2. Interview representative of each group</td>
</tr>
<tr>
<td>Identify current trends in library and information science education</td>
<td>1. Various journal articles</td>
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<tr>
<td></td>
<td>2. School home pages; CRISTAL-ED etc.</td>
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<tr>
<td>Establish job requirements of information professionals</td>
<td>1. Research existing lists</td>
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<td></td>
<td>2. Interview various stakeholders — What is the profession saying? What are employers saying?</td>
</tr>
<tr>
<td>Announce creation of Special Curriculum Project</td>
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<tr>
<td>Establish Advisory Committee</td>
<td>1. Members</td>
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<td>2. Mandate</td>
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<td></td>
<td>3. Objectives</td>
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<td>4. Structure</td>
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<td></td>
<td>5. Procedures</td>
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<td></td>
<td>6. Schedule/Time line</td>
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<tr>
<td>Review University and Provincial requirements</td>
<td>1. Review SGS guidelines</td>
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<td>2. Review CGS guidelines</td>
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<tr>
<td>Profile and Analyze Executive MBA Programs</td>
<td>1. School documentation</td>
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<td>2. Interview selected graduates/current students</td>
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<tr>
<td>Objective</td>
<td>Activity/Task</td>
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<td>----------------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
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<tr>
<td>Needs Assessment</td>
<td>1. Target population; sample selection</td>
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<td>2. Methodology</td>
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<td>3. Focus group/survey/questionnaire</td>
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<td>4. Electronic access ?</td>
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<tr>
<td>Assess Collaborative Program Possibilities</td>
<td>1. Review existing University programs</td>
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<td>2. Meet with Deans as appropriate</td>
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<tr>
<td>Define Degree Structure</td>
<td>1. Possible approaches: CE or Degree?</td>
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<td>2. Possible &quot;paper&quot; - certificate, diploma, Exec. Masters, Masters, Ph.D.</td>
</tr>
<tr>
<td>Define desired student competencies</td>
<td>1. Knowledge/skills required; desired</td>
</tr>
<tr>
<td>Review Curriculum Models; Establish educational</td>
<td>1. Support material for committee</td>
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<tr>
<td>philosophy and learning theory</td>
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<tr>
<td>Define student profile</td>
<td>1. Target market</td>
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<td>2. Entrance requirements</td>
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<td>3. Recruitment methods</td>
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<td>Funding Approaches</td>
<td>1. Self-funded</td>
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<td>2. Supported</td>
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<td>3. Sponsors/Donors/Foundations</td>
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<tr>
<td>Prepare Report for Dean</td>
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<td>Make Appropriate Presentations</td>
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Key Informant - Email Survey
Program Development Directions Survey

As the job descriptions and employment responsibilities of information professionals evolve with the implementation of new technologies in an information-rich workplace, the Faculty of the University continues to evaluate its program directions in order to provide relevant educational opportunities for a wide range of information and technology professionals.

The Dean has formed the Faculty Program Development Advisory Committee chaired by Prof. X. The 10 member group, consisting of faculty and information professionals working in diverse settings, will investigate the employment trends -- the workplace issues and challenges -- for information professionals as the basis for recommending program directions for an advanced degree.

The Advisory Committee's first task is to survey a sample of experts who are planning and managing information infrastructures and the provision of information and knowledge services in a variety of organizations. Central to the planning of a new curriculum for experienced information professionals is an understanding of the challenges and competencies required to do their jobs.

The Advisory Committee invites you to participate in shaping the future of The Faculty's educational programs. We hope that you will take a few minutes to provide us with your thoughts on several broad issues. Please return your responses via email to wallace@theuniversity.ca. Our plan is to then invite a panel of experts to join the Advisory Committee in early April to discuss their views on the type of program the Faculty should pursue.

1. Toward a Knowledge-Based Society and Economy
   
   What are the key knowledge management issues facing Senior Executives in your organization?

   What initiatives are underway to address these challenges?

2. The Information and Knowledge Management Professional - Current and Future Challenges

   What are the key job responsibilities and challenges facing the professionals in your organization who are responsible for managing the information infrastructure (the technology, the content, the interface) and providing information services?

   What competencies (knowledge, skills and attitudes) should these professionals have and continue to develop in order to plan and implement current innovations in
information services as well as to plan for future information demands given the rapid advance in technology and the evolving information needs of your organization?

3. **The Information Environment/The Workplace**

What direction(s) for the provision of information services and infrastructures is your organization planning, or implementing and/or maintaining?

What kinds of professionals are you looking for to accomplish these objectives?

4. **The Prospective Participant**

An advanced degree in information and knowledge management would be useful to the people in the following positions in my organization:

What would make an advanced program attractive to your employee(s) and to you?
Key Informant - Focus Group Discussion Guide

Breakout Session No. 1 - 9:50 - 10:35
The Information Environment/The Workplace Challenges and Directions

Environment
How are organizations coping with the demands for information and knowledge management?
What is the balance between content and technology infrastructure in the information environment?
What are the key knowledge management issues facing Senior Executives in your organization?
What initiatives are underway to address these challenges?

Professionals
What are the key job responsibilities and challenges facing the professionals in your organization who are responsible for managing the information infrastructure (the technology, the content, the interface) and providing information services?

Breakout Session No. 2 - 11:05 - 11:50
Competencies Required by Information Professionals

What competencies (knowledge, skills and attitudes) should these professionals have and continue to develop in order to plan and implement current innovations in information services as well as to plan for future information demands given the rapid advances in technology and the evolving information needs of your organization?

What kind of professional is the employer looking for?
What skills/competencies are required/desired?

Group Session No. 3 - 12:10 - 12:30
Designing A Program

The Prospective Participant
An advanced degree in information and knowledge management would be useful to the people in the following positions in my organization:

The Program
What would make the program attractive to your employee(s) and to you?
What logistics of a program need to be considered?
Who would teach the courses?
What teaching approach would be appropriate?
Appendix A-6
PDAC Research Tools

Key Informant - Interview Script

Introduction

Background of PDAC:

• Academic Plan - program in telematics
• Formation of PDAC - members
• Objectives: Review trends in the information professions; profile student; outline program of courses; outline program characteristics; teaching/learning styles; finance model
• Work to date: Information Gathering: committee meetings; panel of experts meeting; e-survey; Dean’s advisory board discussions; faculty interviews; alumni survey -- moving into interviews.
• Next steps: program component review; proof of concept institute; governance, etc. Report to Dean by Sept.

Part I - Participant Profile

Job responsibilities
What has prepared him/her for current job?

Part II - The Information and Knowledge Management Professional - Current and Future Challenges

1. What are the key job responsibilities and challenges facing the professional in your organization who are responsible for managing the information infrastructure (the technology, the content, the interface) and providing information services?

2. What are the primary competencies (knowledge base, skills and attitudes) which they already have and rely on in order to meet these challenges?

3. What competencies (knowledge base, skills and attitudes) do they need in order to fulfill their job responsibilities? In order to progress in a career path?

4. As we interact in a broadening, global environment and move toward a knowledge-based economy, what competencies (knowledge base, skills and attitudes) do you think will be required for the future?
Part III - The Information Environment/The Workplace

1. What direction(s) for the provision of information services and infrastructures is your organization planning, or implementing, and/or maintaining?

2. What kind of professionals are you looking for to accomplish these objectives?

Part V - The Learning Environment

1. What would make an advanced program attractive to these individuals?

- Location of course:
- Mode of instruction:
- Content - subject focus of course:
- Cost:
- Credential:
- Additional aspects:
Appendix A-6
PDAC Research Tools

The Faculty Alumni Survey - Paper Form

Cover Letter

Dear Alumni,

As the job descriptions and employment responsibilities for information professionals evolve with the implementation of new technologies in an information-rich workplace, the Faculty at the University continues to evaluate its program directions in order to provide relevant educational opportunities for a wide range of library, information, and systems professionals.

The Dean has formed The Faculty Program Development Advisory Committee (PDAC) to advise on possible directions for a new advanced-level educational program supporting continuing professional development. The 10 member group chaired by Prof. X consists of faculty, alumni, and information professionals working in diverse settings. For more information on the PDAC, please visit our Website at http://www.thefaculty/courses/pdac.

The PDAC invites you to participate in shaping the future of the Faculty's continuing professional development opportunities and programs. We hope that you will take a few minutes to provide us with your thoughts on several broad issues related to challenges in the information environment and work place as well as your opinions on the structure of a new advanced-level program.

To participate, you can either forward your responses in the enclosed envelope or obtain the questionnaire from the PDAC Website (http://www.thefaculty/courses/pdac) and respond via email to wallace@thefaculty.ca. We would appreciate hearing from you by June 30, 1998.

Thank you in advance for helping us plan for the future!

Sincerely,

Debra Wallace
Alumni Survey
(Condensed spacing)

Part I - Professional Profile
The Faculty's Alumni are employed in a wide variety of positions in the private and public sectors. A brief description of your employment helps us better understand the numerous roles that the Faculty's graduates have assumed in the work force.

Name (optional):
Year of MLS Graduation: 19__
Other Degree(s) Held and Year Obtained
Currently employed? Yes____ No ____
Current Position or Title:
Brief Job Description - Key Responsibilities:

Part II - The Library and Information Professional - Current and Future Challenges
While change is a constant for many, few professions have experienced as dramatic a change as library and information professionals. These changes are due in part to the increase in the volume of information and variety of information formats, the advancements in information systems and technology, and the increased sophistication of information consumers. By understanding the competencies required to perform your job, the Faculty can develop a curriculum which provides educational experiences that prepare our graduates for their professional roles.

Competencies are defined as the knowledge base (subject matter and content areas), the skills (techniques and abilities), and attitudes (the personal approach and motivation) used in combination to perform your work.

1. What key challenges are you facing as a professional in your organization given the rapid advance in technology and the evolving information needs of your organization?

2. What are the primary competencies (knowledge base, skills and attitudes) which you already have that you rely on in order to meet these challenges?

3. What competencies (knowledge base, skills and attitudes) do you need or would like to further develop in order to fulfill your job responsibilities? In order to progress in your career path?

4. As we interact in a broadening, global environment and move toward a knowledge-based economy, what competencies (knowledge base, skills and attitudes) do you think will be required for the future?

Part III - The Learning Environment
Library and information professionals have always recognized the value of life long, continuous learning. Understanding your future learning requirements will help shape the character of the Faculty courses and programs.
1. What types of learning experiences have you had in the last 10 years? Please check the appropriate category.

<table>
<thead>
<tr>
<th>Category</th>
<th>0</th>
<th>1-5</th>
<th>6-10</th>
<th>Over 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional association conference attendance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workshop participation - workplace sponsored</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workshop participation - outside of workplace</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Certificate program</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Degree program</td>
<td></td>
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<tr>
<td>Personal interest seminars</td>
<td></td>
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<tr>
<td>Self-directed study</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

(Please specify)

2. What types of formal learning experiences have you considered pursuing?

Additional Master's Degree:
(Please specify area, e.g., MBA, MA, MSc., etc.)

Post Graduate Diploma:
(Please specify area of study)

Doctorate:
(Please specify area of study)

Certificate Program:
(Please specify area of study)

Continuing Education Courses:
(Please specify areas of interest)

Other:
(Please specify area(s) of study or interest)

None:

3. If you were to pursue an additional credential in the next 3-5 years, what type of program structure would you consider?

<table>
<thead>
<tr>
<th>Type of Study</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full time study</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evenings - Part time study</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weekends - Part time study</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intensive periods of study (i.e., 1-3 week &quot;power&quot; courses)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Please specify)
4. What would make an advanced program attractive to you? Please comment on the various components.

Location of course:
Mode of instruction:
Content - subject focus of course:
Cost:
Additional aspects:

5. If you were to pursue an advanced program, what type of credential would you want or need to obtain?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master's Degree</td>
<td>___</td>
</tr>
<tr>
<td>Doctorate</td>
<td>___</td>
</tr>
<tr>
<td>Post Graduate Diploma (evaluated course work)</td>
<td>___</td>
</tr>
<tr>
<td>Certificate (non-evaluated course work)</td>
<td>___</td>
</tr>
<tr>
<td>No credential required</td>
<td>___</td>
</tr>
</tbody>
</table>

Part IV - Program Development Process
Designing and implementing a new degree program is a labour intensive task which requires the expertise of many people in order to plan the content, the learning environment, the outcomes, and the logistics. If you would like to contribute further to the design process or continue to be informed of the program's progress, please provide us with contact information.

_____ Yes, I am interest in providing further information to the PDAC on the development of a new program. Please contact me for further information on my responses.

_____ Yes, I am interest in knowing more about the new advanced level program. Please keep me on the mailing list.

Address:
Phone:
Fax:
Email:
If you would like to provide contact information separately from your survey responses, please email these items to: wallace@theFaculty.ca.

Additional Comments:

Thank you again for taking the time to answer these questions. Your comments are an important part of the curriculum design process and we appreciate your participation!
## Appendix A-7
PDAC Data Analysis Coding Scheme

<table>
<thead>
<tr>
<th>Element</th>
<th>Category</th>
<th>Characteristic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge management issues in the workplace</td>
<td>Policy and Planning</td>
<td>Strategic planning; Selection of information; Human resources</td>
</tr>
<tr>
<td></td>
<td>Processes and Services</td>
<td>Access, storage, organization retrieval, dissemination; Management</td>
</tr>
<tr>
<td></td>
<td>Technology</td>
<td>Systems - hardware, software, and communications; Culture</td>
</tr>
<tr>
<td></td>
<td>Knowledge Base</td>
<td>Information for decision making</td>
</tr>
<tr>
<td>Initiatives underway</td>
<td>Organization and Business</td>
<td>Organizational structure; Business impacts; Client impacts</td>
</tr>
<tr>
<td>Responsibilities and challenges facing the information professional</td>
<td>Training</td>
<td>Internal; External</td>
</tr>
<tr>
<td></td>
<td>Evaluation</td>
<td>Decisions; Outcomes</td>
</tr>
<tr>
<td>Competencies required by information professionals</td>
<td>Knowledge</td>
<td>Technology LIS Information Policy Business and Organizational Design</td>
</tr>
<tr>
<td></td>
<td>Skills</td>
<td>General LIS Technology Business</td>
</tr>
<tr>
<td></td>
<td>Attitudes</td>
<td>General Business</td>
</tr>
<tr>
<td>Program Features</td>
<td>Design Elements</td>
<td>Logistics Structure</td>
</tr>
<tr>
<td></td>
<td>Content</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Methodology</td>
<td>Teaching/Learning styles</td>
</tr>
<tr>
<td></td>
<td>Approach</td>
<td>Collaborative Multi-discipline</td>
</tr>
<tr>
<td>Element</td>
<td>Category</td>
<td>Characteristic</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>--------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Profile of Perspective Student</td>
<td>Objective for Education</td>
<td>Increased competencies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Career advancement</td>
</tr>
<tr>
<td></td>
<td>Profile</td>
<td>Competency background</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Job position</td>
</tr>
<tr>
<td>General Advice on Program Development</td>
<td>Technology</td>
<td>Intranets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Internet</td>
</tr>
<tr>
<td>The KM Environment</td>
<td></td>
<td>Content</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Service</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trends</td>
</tr>
<tr>
<td>Program Design</td>
<td>Information Professionals</td>
<td></td>
</tr>
</tbody>
</table>
### Key Informant - Focus Group

<table>
<thead>
<tr>
<th>Element</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issues</td>
<td>- How to distribute knowledge in the organization; information as a managed, shared commodity</td>
</tr>
<tr>
<td>Challenges</td>
<td>- How to get knowledge and make it useful in a given situation</td>
</tr>
<tr>
<td>Responsibilities</td>
<td>- Establishing corporate intranets</td>
</tr>
<tr>
<td></td>
<td>- Involvement at senior, strategic levels</td>
</tr>
<tr>
<td></td>
<td>- Involved in global practice, but everything is categorized differently; how to streamline, share common objects in different businesses</td>
</tr>
<tr>
<td></td>
<td>- How to classify information; classify knowledge</td>
</tr>
<tr>
<td></td>
<td>- What value is put on information that is properly selected, structured, presented in context -- becomes a corporate asset</td>
</tr>
<tr>
<td></td>
<td>- Gap between decision makers and information gathers</td>
</tr>
<tr>
<td></td>
<td>- Moving toward decentralization; need for employees to be informed decision makers -- on the other hand, technology enables further centralization as seen in government</td>
</tr>
<tr>
<td></td>
<td>- Need to understand purpose - Libraries (some) lost sight of their mission and were no longer necessary;</td>
</tr>
<tr>
<td></td>
<td>- How to train people to ask the right questions which is in fact teaching them how to think</td>
</tr>
<tr>
<td></td>
<td>- Positioning information professionals as part of the strategic management team - planning, business development, product development, etc.; aligning with the business directions; understanding the mission and feeding information to grow it.</td>
</tr>
<tr>
<td></td>
<td>- Understanding what the organization needs and knowing where to go find it.</td>
</tr>
<tr>
<td></td>
<td>- The issue is not more information, but in fact less information</td>
</tr>
<tr>
<td></td>
<td>- Challenge to prepare people for tomorrow, not today.</td>
</tr>
<tr>
<td></td>
<td>Organizations are hiring for tomorrow, not today.</td>
</tr>
<tr>
<td>Actions</td>
<td>- Financial sector (e.g., mutual fund management) - shown ability to do quality research, accumulate information, analyze information, and make decisions</td>
</tr>
<tr>
<td></td>
<td>- Ride the technology horse, and when you get in there you can start talking about knowledge management</td>
</tr>
<tr>
<td><strong>Element</strong></td>
<td><strong>Comments</strong></td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Competencies      | -Understand technology; technology skills  
|                   | -Knowledgeable about networked information and infrastructures  
|                   | -Creating knowledge stewards; multi disciplined; experts in field; able to distribute knowledge; tell people how to learn about knowledge, how to find knowledge; help organizations learn  
|                   | -Understand the business at hand; ability to address needs from an organizational perspective  
|                   | -Ability to shape the culture  
|                   | -Highly collaborative workers  
|                   | -Management skills; strategic planning skills  
|                   | -Marketing expertise  
|                   | -Project management  
|                   | -Change management-need information and knowledge to manage change  
|                   | -Organize knowledge and help people ask the right questions  
|                   | -Core skills (leadership, self-starting, communication); transportable skills (analytical, problem solving); transferrable skills (things used on that job that can be transferred to the next job) |
| Program Features  | -Creating an environment where people can pick up skills and approaches from practitioner/experts - "things" not written in a textbook - create a learning community - creating a mentorship network  
|                   | -Could test curriculum in CE sector  
|                   | -Selected courses could be taken by students in other degree programs; would need only part of the whole program  
|                   | -Evidence based decision making; having the best scientific knowledge on which to base your advice - health field practice transferrable to other sectors?  
|                   | -"Power" courses; intensive 3 week courses; taught by practitioners/experts in the field; concentrated effort  
|                   | -Flexibility to maneuver the program from year to year making it more responsive to the needs of the marketplace  
|                   | -Modular approach  
| Prospective       | -In workplace 10-15 years; career change, career upgrade, change in professional direction  
| Student           | -Midcareer; seasoned;  
|                   | -Transformative for people with information type backgrounds; what about those without an academic background in the structure and development of information?  
|                   | -People with information science (MLS, MIST, MIS, etc.), computer science or MBA backgrounds  
|                   | -Creators or consumers of information, or both?  
|                   | -Target small audience and fill niche
<table>
<thead>
<tr>
<th>Element</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Other  | -As we move further into the information economy, what is happening with the information professionals?  
-To understand gov't information "need" -- monitor the RFP's for consulting services. Has The Faculty ever obtained one of those contracts?  
-How to deliver the message and get the buy-in for program development -- great opportunity to give business competitive advantages, faster decision making etc. |
### Appendix A-8

**PDAC Data Analysis Summaries**

**Key Informant - Email Survey Analysis**

**PART I - Toward a Knowledge-Based Society and Economy**

What are the key knowledge management issues facing Senior Executives in your organization?

<table>
<thead>
<tr>
<th>Category</th>
<th>Characteristic</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy and Planning</td>
<td>Strategic planning;</td>
<td>-Because of the aging population, staff are retiring and taking the corporate knowledge away with them. Senior executives are grappling with how to preserve this knowledge.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Lack of a strategy to integrate technology, information and staff to improve service delivery to internal and external customers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-How to accumulate corporate knowledge within the context of the company.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-The ability not to be vendor driven and to use technology more strategically and with better results.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Budgeting (licensing issues, grantsmanship, etc.).</td>
</tr>
<tr>
<td>Selection of information</td>
<td></td>
<td>-Information need: to be selective, to focus on the critical information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Choosing “legal content” for Intranet.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-No naming conventions, no retention guidelines and no procedures for getting the information into the shared domain.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-The capturing of knowledge and presenting in an electronic environment given the traditional corporate culture still present within the organization.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Knowledge base formation and management, intellectual property management and human resource strategic management.</td>
</tr>
<tr>
<td>Human resources</td>
<td></td>
<td>-Little relationship between planning for human resources and information based services.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Staffing (especially keeping programmers in a hot job market).</td>
</tr>
<tr>
<td>Category</td>
<td>Characteristic</td>
<td>Comments</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-----------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Processes and Services</td>
<td>Storage, organization, retrieval, dissemination</td>
<td>- Senior executives cannot find internally generate information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Infrastructure, corporate-wide access (corporate centre, branches, foreign offices).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- To disseminate external and internal information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Making information dumps digestible.</td>
</tr>
<tr>
<td>Technology</td>
<td>Systems; hardware and software</td>
<td>- Choosing knowledge tools that post process information into answers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Electronically the shared drives are a mess.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Technological change (keeping abreast of rapid change)</td>
</tr>
<tr>
<td>Knowledge Base</td>
<td>Information for decision making</td>
<td>- Little knowledge of KM tools and their use.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- To recognize indicators of trends.</td>
</tr>
<tr>
<td>Organization and Business</td>
<td>Impacts on the organizational structure; Business</td>
<td>- Developing a clear business model that shows a path between information and desirable organizational behaviours with respect to decisions.</td>
</tr>
<tr>
<td></td>
<td>impacts; client impacts</td>
<td>- Organizational boundaries (turf) that works against integration of disciplines.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Little awareness of the options for work force design and work design arising from technology and what the information management implications are for these types of organizations.</td>
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<tr>
<td></td>
<td></td>
<td>- To communicate across department; to create &quot;connectedness&quot; in the organization locally and globally.</td>
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<tr>
<td></td>
<td></td>
<td>- To stay aware of what all the teams are doing, and then using that knowledge to develop new business initiatives.</td>
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<tr>
<td></td>
<td></td>
<td>- To anticipate needs, be proactive.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Meeting the needs of our faculty, staff, and students.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Consortial cooperation (e.g., C OPPUL).</td>
</tr>
<tr>
<td>Training</td>
<td>Internal and external</td>
<td>- True information literacy training.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Training and support of Libraries staff to provide the best possible service in a rapidly changing environment.</td>
</tr>
</tbody>
</table>
What initiatives are underway to address these challenges?

<table>
<thead>
<tr>
<th>Category</th>
<th>Characteristic</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy and Planning</td>
<td>Strategic planning;</td>
<td>-Our current situation lacks any focused initiatives to address these issues in strategic terms.</td>
</tr>
<tr>
<td></td>
<td>Selection of information;</td>
<td>-HR skills databanks</td>
</tr>
<tr>
<td></td>
<td>Human resources;</td>
<td></td>
</tr>
<tr>
<td>Processes and Services</td>
<td>Storage, organization, retrieval, dissemination</td>
<td>-Re-engineering the information workflow.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-The solution is defining user needs and developing the processes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Document proprietary information.</td>
</tr>
<tr>
<td>Technology</td>
<td>Systems; hardware and software</td>
<td>-Upgrades to IT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Intranet.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-New Desktop tools.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Filtering and agents (adapting them to our needs for competitive intelligence).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-They're throwing software at the problem such as Lotus Notes or Openinsight. This is not the solution.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Corporate-Wide Intranet site to provide access to the pockets of “home-grown” intranets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Some form of groupware may be employed in the future to organize this information into accessible.</td>
</tr>
<tr>
<td>Knowledge Base</td>
<td>Information for decision making</td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Characteristic</td>
<td>Comments</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Organization and</td>
<td>Organizational structure; business</td>
<td>- A focused Knowledge Management team in place globally in the organization.</td>
</tr>
<tr>
<td>Business</td>
<td>impacts; client impact</td>
<td>- Created a new department that delivers both internal and external information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Team approach to business analysis.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Frequent team-oriented meetings where current goals are reviewed. They get post-postponed a lot, so they're not very effective.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NETDOC Committee (NETDOC is our campus network of electronic databases) and associated procedures and budgets.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- A proposed Electronic Services Advisory Committee to coordinate a system-wide approach for dealing with electronic information services.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Cross-divisional partnerships.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The solution is defining user needs and developing the processes.</td>
</tr>
<tr>
<td>Training</td>
<td>Internal and external</td>
<td>- Training of staff in software and soft skills.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Re-training the information handling staff to adapt to new work processes and ultimate behavioural goals.</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Testing; Evaluation of decisions,</td>
<td>- Pilot projects testing new methods of providing quality service to faculty, staff, and students (e.g. Relais digital document delivery, electronic course reserves)</td>
</tr>
<tr>
<td></td>
<td>processes, outcomes</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>- NONE - The major foci are Y2K and document management.</td>
</tr>
</tbody>
</table>
PART II - The Information and Knowledge Management Professional — Current and Future Challenges

What are the key job responsibilities and challenges facing the professionals in your organization who are responsible for managing the information infrastructure (the technology, the content, the interface) and providing information services?

<table>
<thead>
<tr>
<th>Category</th>
<th>Characteristic</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy and Planning</td>
<td>Strategic planning; Selection of information; Human resources</td>
<td>- Selling information interventions and showing the payoff. - At a higher management level, it is an extreme challenge to properly address the content and interface planning of the information infrastructure. - More people are needed to fulfill the needs of the various teams, from providing technical support to actually communicating what is happening with the systems. - Management is required to prioritize tasks to try to get all the requests fulfilled.</td>
</tr>
<tr>
<td>Processes and Services</td>
<td>Storage, organization; Retrieval, dissemination</td>
<td>- Manage the content of the solution. - Transition from paper-based to electronic formats. - Lead programs that deliver connectedness to the organization. - Management and retrieval of electronic resources.</td>
</tr>
<tr>
<td>Category</td>
<td>Characteristic</td>
<td>Comments</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Technology     | Systems; hardware and software | -Lack of trust in IT professionals - they are never on time or within budget  
"-Technoholics" - an addiction to the latest technology as the “solution” to solve all problems.  
- The focus has been on the technology rather than the content or organization.  
- Recommend technical solutions.  
- Manage the choice or combination of “push” and “pull” technologies.  
- The systems are complex enough and are depended on a great deal that fire-fighting is a constant activity.  
- The building of cost effective applications.  
- Developing database applications that are really useful. IS people know about hardware which is the easy part. Developing applications using the appropriate medium is another thing. |
| Knowledge Base | Information for decision making | -Communicating key info issues to execs (copyright, intellectual capital, licensing)  
- Breaking through the exec’s consumer web awareness to business uses and professionalism.  
- Lack of knowledge and skills that integrate IT and IM.  
- Top management does not have the requisite skills nor the time to fully understand the planning process, let alone complete the detailed planning tasks. |
<table>
<thead>
<tr>
<th>Category</th>
<th>Characteristic</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization and Business</td>
<td>Impacts on the organizational structure;</td>
<td>-Understanding the organizational environment (not just the info environment).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Learning to partner with IST, HR, etc.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Infiltrating the enterprise as professionals not residing in a “host” organizations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Having colleagues and clients and not “users”.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-The information infrastructure management does not have a dedicated information infrastructure group.</td>
</tr>
<tr>
<td></td>
<td>Business impacts;</td>
<td>-Identify business needs.</td>
</tr>
<tr>
<td></td>
<td>Client impacts</td>
<td>-Dealing with a frustrated user population that is tired of learning another software that is supposed to solve all their problems.</td>
</tr>
<tr>
<td>Training</td>
<td>Internal and external</td>
<td>-Steep learning curve.</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Of decisions, processes, outcomes</td>
<td>-Selling information interventions and showing the payoff.</td>
</tr>
</tbody>
</table>
What competencies (knowledge, skills and attitudes) should these professionals have and continue to develop in order to plan and implement current innovations in information services as well as to plan for future information demands given the rapid advances in technology and the evolving information needs of your organization?

<table>
<thead>
<tr>
<th>KNOWLEDGE</th>
<th>SKILLS</th>
<th>ATTITUDES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>General</td>
<td>General</td>
</tr>
<tr>
<td>-Understanding software and when to use it.</td>
<td>-Negotiating skills.</td>
<td>-Patience.</td>
</tr>
<tr>
<td>-Knowing how to manage electronic information.</td>
<td>-Political skills (KM is always very political).</td>
<td>-Team player balance by leadership.</td>
</tr>
<tr>
<td>-A strong background in information management, human computer interfaces, and hyper-media.</td>
<td>-Excellent written and communication skills.</td>
<td>-Innovation.</td>
</tr>
<tr>
<td>-Testing/implementing new technology related to their specific area or interest.</td>
<td>-Interviewing skills.</td>
<td>-Attitude of continuous learning.</td>
</tr>
<tr>
<td>-Broad awareness of the direction in international and market sector standards.</td>
<td>-Presentation skills.</td>
<td>-It will often be necessary for these people to function as missionaries to illustrate and promote this importance to senior managers whose working experiences have been mainly focused on “things”, rather than intangibles.</td>
</tr>
<tr>
<td>-Technical savvy is wonderful but it sometimes breaks down when people need to be assured that their tasks are recognized as important.</td>
<td>-Excellent analytical and conceptual thinking skills.</td>
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</tr>
<tr>
<td></td>
<td>-Problem solving and creativity.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Leadership.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Time and prioritization management.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Project management and administration skills.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Interpersonal skills.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-People skills.</td>
<td></td>
</tr>
<tr>
<td>KNOWLEDGE</td>
<td>SKILLS</td>
<td>ATTITUDES</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td><strong>Information Policy</strong></td>
<td><strong>Business Related</strong></td>
<td><strong>Business</strong></td>
</tr>
<tr>
<td>- Intellectual property</td>
<td>- Sales skills as distinct</td>
<td>- Entrepreneurial.</td>
</tr>
<tr>
<td>management in a global</td>
<td>from marketing skills.</td>
<td>- Strategic business</td>
</tr>
<tr>
<td>economy - law, court decisions,</td>
<td>- Training and education</td>
<td>sense.</td>
</tr>
<tr>
<td>licensing, royalties, etc.</td>
<td>skills (not just teaching).</td>
<td></td>
</tr>
<tr>
<td>- Law and technology —</td>
<td></td>
<td></td>
</tr>
<tr>
<td>commercial law, patents, trade</td>
<td></td>
<td></td>
</tr>
<tr>
<td>marks, and technology related</td>
<td></td>
<td></td>
</tr>
<tr>
<td>contracts.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Organization and Business</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- The information business -</td>
<td></td>
<td></td>
</tr>
<tr>
<td>information based on goods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and services, regulatory issues,</td>
<td></td>
<td></td>
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<tr>
<td>value added, costing, and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>business strategies.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Understanding of the intrinsic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>importance of knowledge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>management to the core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>operations of the organization.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PART III - The Information Environment/The Workplace

What direction(s) is your organization planning/implementing/maintaining for the provision of information services and infrastructures?

<table>
<thead>
<tr>
<th>Category</th>
<th>Characteristic</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy and Planning</td>
<td>Strategic planning; Selection of information; Human resources</td>
<td>-Planning - staffing a senior position with responsibility for architecture, security application support and information resources management (IRM is new).</td>
</tr>
</tbody>
</table>
| Processes and Services | Storage, organization; Retrieval, dissemination | -Will be providing more information on our corporate intranet. We will need to establish much more focus on information services just in order to accomplish this task effectively. This will mean dedicating resources to interfaces and content.  
-Participation/publishing on local intranet(s).  
-Beyond the Desktop to the person in the chair is what's important!  
-Maintaining online search services.  
-Growing responsibility in providing "environmental scan".  
-Growing responsibility in competitive intelligence.  
-Growing expectation to deliver articles to the desktop.  
-Document delivery services (ARIEL, AVISO, soon Relais).  
-NETDOC services (campus network of databases).  
-Libraries' Web-Based services and website.  
-All employees have access to a corporate-wide knowledge base. |
| Technology           | Systems; hardware and software                      | -Library system (circulation, cataloguing, acquisitions, etc.).  
-To move to a groupware solution would be a step further into content, interfaces and information organization.  
-Switch to a new hosting service to improve the poor relationship with the current service providers. |
<table>
<thead>
<tr>
<th>Category</th>
<th>Characteristic</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Base</td>
<td>Information for decision making</td>
<td></td>
</tr>
<tr>
<td>Organization and Business</td>
<td>Impacts on the organizational structure; Business impacts; Client impact</td>
<td>- Enterprise wide implementations (not bounded by geography and sometimes not by the traditional concept of &quot;company&quot;). - Integration of 7 IT units and hundreds of businesses into one organization. - Growing partnerships with internal clients to anticipate needs. - Cross-divisional partnerships.</td>
</tr>
<tr>
<td>Training</td>
<td>Internal and external</td>
<td>- Growing role as consultant in coaching others to search. - Training database users, Internet users.</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Of decisions, processes, outcomes</td>
<td></td>
</tr>
</tbody>
</table>
What kinds of professionals are you looking for to accomplish these objectives?

<table>
<thead>
<tr>
<th>KNOWLEDGE</th>
<th>SKILLS</th>
<th>ATTITUDES</th>
<th>FUNCTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>General</td>
<td>-Common sense.</td>
<td>General</td>
</tr>
<tr>
<td>-Technology architecture</td>
<td>-Broad based market awareness (information</td>
<td>-Realistic about time lines.</td>
<td>-Contractors for</td>
</tr>
<tr>
<td>and knowledge software.</td>
<td>ecology models).</td>
<td>-Honesty.</td>
<td>specific projects.</td>
</tr>
<tr>
<td>-Computer lingo.</td>
<td>-Presentation skills.</td>
<td>-Refusal to over commit.</td>
<td></td>
</tr>
<tr>
<td>-IT and its applications</td>
<td>-Design skills (product, interface, program,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>to libraries.</td>
<td>market plan, training plan, etc.).</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Communication with ease with IS people.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Leadership.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-How much time is required to complete a task</td>
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<tr>
<td></td>
<td>and what snags are anticipated.</td>
<td></td>
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<tr>
<td></td>
<td>-Soft skills - i.e., classification, retention</td>
<td></td>
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<tr>
<td></td>
<td>scheduling, indexing, and defining user needs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information Policy</td>
<td>Technology</td>
<td>-Common sense.</td>
<td>Technical</td>
</tr>
<tr>
<td>Organization and Business</td>
<td>-Software application skills in info mining,</td>
<td>-Realistic about time lines.</td>
<td>-Mix of techies,</td>
</tr>
<tr>
<td></td>
<td>algorithms, search engines, and post processors.</td>
<td>-Honesty.</td>
<td>information managers</td>
</tr>
<tr>
<td></td>
<td><strong>Information Skills</strong></td>
<td>-Refusal to over commit.</td>
<td>and sophisticated users.</td>
</tr>
<tr>
<td></td>
<td>-Mapping skills.</td>
<td></td>
<td>-Programmer-analysts</td>
</tr>
<tr>
<td></td>
<td>-Answer skills vs. information delivery skills.</td>
<td></td>
<td>and systems analysts.</td>
</tr>
<tr>
<td></td>
<td>-Reporting and post processing skills (beyond</td>
<td></td>
<td>-Chief Information</td>
</tr>
<tr>
<td></td>
<td>abstracting and highlighting).</td>
<td></td>
<td>Officer.</td>
</tr>
</tbody>
</table>


PART IV - The Prospective Participant

An advanced degree in information and knowledge management would be useful to the people in the following positions in my organization:

<table>
<thead>
<tr>
<th>TYPES OF FUNCTIONS</th>
<th>TYPES OF POSITIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>-Manage an organization of 10+ employees, manage a large budget, and/or exercise high-level organization-wide decision-making authority for information management or policies.</td>
<td></td>
</tr>
<tr>
<td>-Manage not only internal knowledge, but also to manage all the interfaces between company-proprietary cyberspace and public cyberspace.</td>
<td><strong>General</strong></td>
</tr>
<tr>
<td></td>
<td>-Vendor executives.</td>
</tr>
<tr>
<td></td>
<td>-Mid-career MLS's looking for retreading and considering an MBA or IT degree.</td>
</tr>
<tr>
<td></td>
<td><strong>Technical</strong></td>
</tr>
<tr>
<td></td>
<td>-Manager, Info Services.</td>
</tr>
<tr>
<td></td>
<td>-Manager, Systems</td>
</tr>
<tr>
<td></td>
<td>-Analytics.</td>
</tr>
<tr>
<td></td>
<td>-Public Relations.</td>
</tr>
<tr>
<td></td>
<td>-Product Managers.</td>
</tr>
<tr>
<td></td>
<td>-Managers of Clinical Research.</td>
</tr>
<tr>
<td></td>
<td>-Managers of Customer Service.</td>
</tr>
<tr>
<td></td>
<td>-Training Director in Human Resources.</td>
</tr>
<tr>
<td></td>
<td>-Chief Information Officer.</td>
</tr>
<tr>
<td></td>
<td>-Librarians working in IT.</td>
</tr>
<tr>
<td></td>
<td>-Divisions of Operations and Technology or information centres.</td>
</tr>
</tbody>
</table>
What would make the program attractive to your employee(s) and to you?

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>CONTENT</th>
<th>METHODOLOGY</th>
</tr>
</thead>
<tbody>
<tr>
<td>-Some form of widely respected &quot;spin&quot; like an executive MBA. -The University branding. -Part-time learning. -Completed within one year (which would allow a professional to take a 12 month leave to complete if necessary) -Flexible hours.</td>
<td>-Wide range of electives to choose from -Strong in Information Technology - e.g. Networking, Intranets, Java, Lotus Notes, Domino, Building internal databases, datawarehousing, search skills in major database systems ed. Knight Ridder, Infomart. -Strong in Business — overlap with MBA, finance skills, organizational awareness, industry knowledge. -Strong in Management — business communication and presentation, priority and time management, people management, recruitment, people development. -Technical knowledge combined with the human element.</td>
<td>-A substantial portion of the degree time spent on directed studies and applied research. -Co-op model would be interesting — partner with corporate leaders in Knowledge Management e.g. Microsoft. -Emphasis on hands-on experience. Hands-on experience should address issues (perhaps overlooked by the computer science/engineering candidates). Examples: digital library/intranet development where focus is placed on the challenge of management and retrieval using emerging standards for metadata (i.e. Dublin Core).</td>
</tr>
</tbody>
</table>
Appendix A-8
PDAC Data Analysis Summaries

Alumni Survey Analysis

Background

During Meeting No. 2 of the PDAC, members discussed the importance of building on the Faculty's strengths and suggested that alumni might be both a good source of information plus examples of information professionals in leadership positions. The Committee recommended that a survey be developed for those graduates considered to be in mid-career positions. Using the core questions developed for the resource level survey and interviews, a questionnaire was developed, tested, revised, and distributed. The mailing included a cover letter which introduced the PDAC and invited participation, the survey, and an addressed, stamped envelope. In addition to the paper survey, Respondents had the option of filling out a web version of the survey.

On June 15th, 335 surveys were mailed to alumni graduating from 1983-1988. The labels were supplied by the University Development Office. Of the 335 surveys mailed, 12 were returned making the possible sample size 323. By the first week of July, a less than 10% return rate had been achieved. A second letter inviting participation from the Dean was sent on July 15th.

Responses

At the point of analysis, 38 responses or a 12% return had been received, seven or 18% were web-based. Responses by question were as follows:

Part I - Professional Profile

1. Graduation Year.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>82</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>83</td>
<td>7</td>
<td>18</td>
</tr>
<tr>
<td>84</td>
<td>7</td>
<td>18</td>
</tr>
<tr>
<td>85</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>86</td>
<td>8</td>
<td>21</td>
</tr>
<tr>
<td>87</td>
<td>6</td>
<td>16</td>
</tr>
</tbody>
</table>
2. Other Degrees Held. This question was asked to ascertain the number of formal programs already undertaken in addition to the MLS from the Faculty. For the purpose of analysis, undergraduate degrees were not included.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>88</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Blank</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

MA - 3  
MS - 1  
MSc. - 2  
MES - 1  
STB - 1  
Ph.D. - 2

No additional graduate degrees listed - 9

Of those holding multiple graduate degrees, 6 or 75% held one addition degree, and 2 or 25% held two additional graduate degrees.

3. Employment. The majority of the respondents were employed. Thirty three respondents or 87% had either full or part time jobs. Four respondents or 11% were unemployed. There was no employment indication from one respondent. Of the job titles listed for the 33 employed respondents, 27 positions or 82% were directly related to libraries or information and resource centres. Of the six positions not directly related to libraries, alumni positions included: chaplin, database coordinator, manager - product marketing, director business development, research communications, product and sales manager. The survey did not ask if these positions were somehow related to the information industry.
## Part II - The Library and Information Professional

### Current and Future Challenges and the Competencies Required

<table>
<thead>
<tr>
<th>Element or Issue</th>
<th>Current Challenges</th>
<th>Existing Competencies</th>
<th>Competencies Needed</th>
<th>Competencies Need - Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology and Information Sources</td>
<td>implementing and maintaining technology with an emphasis on the internet and intranets; managing the slow adaptation of technology; keeping up with standards; and client training.</td>
<td>overview of or specific knowledge or skill in types of computer hardware, software, and telecommunications; understanding of technology trends; database content and structure; Web design skills.</td>
<td>continuing to stay abreast of developments; web; database management; specific software packages and networks; automation project management.</td>
<td>continuing to stay abreast of developments; interpreting technology from techies to lay people - a continuum of communication; web developments.</td>
</tr>
<tr>
<td>LIS Knowledge and Skills</td>
<td></td>
<td>fundamentals of library and information science skills in acquiring, organizing, storing, accessing, and distributing information.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information and Knowledge Management</td>
<td>packaging and presenting information; interacting with various team players; continuous education to upgrade skills, understand trends and issues.</td>
<td></td>
<td></td>
<td>evaluation; presentation.</td>
</tr>
<tr>
<td>Element or Issue</td>
<td>Current Challenges</td>
<td>Existing Competencies</td>
<td>Competencies Needed</td>
<td>Competencies Need - Future</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Change Management</td>
<td>repositioning the library and the library staff roles within an organization; managing rapid and constant change; dealing with stress, job security, employee morale and motivation.</td>
<td></td>
<td>general change management skills, stress management skills.</td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td>establishing cost effectiveness of information services; time management; establishing a customer service focus.</td>
<td>human relations skills; communication skills; public relations skills; political acumen; project management; marketing skills; understanding of organizational design and business elements; understanding &quot;the big picture&quot;.</td>
<td>general management and supervisory skills; general business knowledge and skills; people skills; skills; customer service; communication skills; project management skills; advocacy.</td>
<td>general management and communication skills; leadership; promotional skills; creativity; problem analysis; training skills; budgetary and negotiation skills; broad knowledge base of library areas; broad knowledge base of organization's speciality and interests.</td>
</tr>
<tr>
<td>Public Relations</td>
<td>communicating the value of LIS skills; overcoming the library/librarian stereotype; general PR activities both internally and externally.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Element or Issue</td>
<td>Current Challenges</td>
<td>Existing Competencies</td>
<td>Competencies Needed</td>
<td>Competencies Need - Future</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------</td>
<td>-----------------------</td>
<td>---------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Global</td>
<td></td>
<td></td>
<td>foreign language.</td>
<td>copyright issues.</td>
</tr>
<tr>
<td>Attitudes</td>
<td>Team player; flexibility; curiosity; perseverance; confidence; continuous learning; embrace change; positive attitude.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Part III - The Learning Environment

1. Number of types of learning experiences over the last 10 years.

<table>
<thead>
<tr>
<th>Type</th>
<th>0</th>
<th>1-5</th>
<th>5-10</th>
<th>Over 10</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>Prof Assoc. Conf</td>
<td>3</td>
<td>13</td>
<td>9</td>
<td>11</td>
<td>33</td>
</tr>
<tr>
<td>Workshop-work</td>
<td>0</td>
<td>9</td>
<td>14</td>
<td>14</td>
<td>38</td>
</tr>
<tr>
<td>Workshop-nonwork</td>
<td>2</td>
<td>14</td>
<td>9</td>
<td>12</td>
<td>35</td>
</tr>
<tr>
<td>Certificate</td>
<td>17</td>
<td>11</td>
<td>2</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Degree</td>
<td>27</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>5</td>
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<tr>
<td>Personal Interest</td>
<td>1</td>
<td>19</td>
<td>6</td>
<td>6</td>
<td>31</td>
</tr>
<tr>
<td>Other*</td>
<td>2</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>10</td>
</tr>
</tbody>
</table>

*Other types include:
Self education through a learning group which meets once a month
Became a story teller
Community groups
Post Grad. Diploma
Single courses
Teaching library workshops
Reading
Volunteer work

The significance of this question is a reflection of the positive attitude toward continuing education. Of the 38 respondents, 100% indicated that they had participated in at least 2 categories or more of learning opportunities with 79% having participated in either 4 or 5 categories.

<table>
<thead>
<tr>
<th>No. of Categories</th>
<th>No. of Respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>4</td>
<td>16</td>
<td>42</td>
</tr>
<tr>
<td>5</td>
<td>14</td>
<td>37</td>
</tr>
<tr>
<td>6</td>
<td>3</td>
<td>8</td>
</tr>
</tbody>
</table>
2. Types of other formal learning experience which respondents have considered pursuing.

<table>
<thead>
<tr>
<th>Type of Program</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Program</td>
<td>9</td>
<td>17</td>
</tr>
<tr>
<td>Additional Masters</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>Post Graduate Diploma</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Doctorate</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>Certificate Program</td>
<td>20</td>
<td>38</td>
</tr>
<tr>
<td>Continuing Education</td>
<td>20</td>
<td>38</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>None</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Blank</td>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>

Topics for the various learning experiences were identified as the following:

- **Masters**: MBA, MPA, MSc, MA, Archival Studies
- **Post Grad**: Web master, library, teaching, municipal administration, computer science, adult education
- **Doctorate**: Library Science
- **Cert. Prog.**: Microsoft, novelle, computer programming, The Faculty IBT, business management, computer technology
- **Cont. Educ.**: Internet, web master, specific software packages, technology developments, HTML, JAVA programming, computer skills, technical writing, PC and MAC maintenance, management practice and business administration, supervisory skills, starting a business, communication skills, presentations, sales and marketing, public speaking, French, music, landscape design, fine art and art history, theology, language, other personal interests.
- **Other**: LLBL, BSc in environmental studies, additional subject expertise.
3. What type of program structure would be attractive?

<table>
<thead>
<tr>
<th>Type</th>
<th>Yes</th>
<th>No</th>
<th>Blank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Time</td>
<td>5</td>
<td>17</td>
<td>5</td>
</tr>
<tr>
<td>Part Time - Eve</td>
<td>18</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Part Time - Wkends</td>
<td>17</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Power Course</td>
<td>23</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Other*</td>
<td>6</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Blank</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>All No's</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

*Other structures included: summer courses and forms of distance education (correspondence, web-based).

Twenty-seven or 71% of the respondents indicated that they would prefer a combination of course structure. Five of the 71% indicated that they would prefer a combination of both part time options. And, of those respondents marking only one option as their preference, 55% preferred power courses only, 18% preferred part time evening courses only; 18% other structures; and 1% preferred the full time option only.

4. Component of a program which would be attractive?

Respondents were quite sketchy in this section and 13 left it blank entirely.

Content - Technology skills, specific software packages, internet and intranets, information technology trends, website construction, electronic document delivery, knowledge management, project management, management and leadership, marketing, coping skills.

Instructional Style - In order of preference: Combination of classroom and distance education (10); classroom (5); Web (4); video conference (1); any distance methodology (1).

Location - In order of preference: The Faculty, The University (12), home (4), libraries (1), out of home (1), southern Ontario (1), Vancouver (1), Canada (1), convenient location (1); blank (15).

Cost - Reasonable and affordable (3), competitive (1), employer sponsored (1), expensive (1), low and cheap (2), on par with MLS, IBT or SGS courses (3); blank (19).

Certification Desired - multiples checked.
<table>
<thead>
<tr>
<th>Type</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masters</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Doctorate</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Post Grad Diploma</td>
<td>16</td>
<td>3</td>
</tr>
<tr>
<td>Certificate</td>
<td>16</td>
<td>5</td>
</tr>
<tr>
<td>None</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>Totally Blank</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

5. Additional comments.

- Attract motivated students so interaction between colleagues is stimulating, helps in professional networking.
- Recognition of program or usefulness overall.
- Existing continuing education course offerings not adequately publicized, promoted by The Faculty to alumni.
- Offered by business school recognized as offering high quality programmes.
- Sorry to sound so negative but 11 years after graduating from library school, I am looking for an alternative career. Public Service Librarian has turned into a babysitter's job -- we babysit the desk (rarely a really detailed reference question). babysit the phone and now babysit the internet. That plus a union environment where you advance by seniority, never by skill or qualification plus years of decreased budgets. You can perhaps see why I'm discouraged and hoping to get something else more exciting.
- The ability to shape a course into something relevant to my job and needs.
- Since my ideal course would be web-based, it may have several different instructors/industry experts for different topics.
- Sorry - don't mean to be negative but I'm really not interested in using my precious spare time in doing work related things. My hobbies all involve totally different activities. It's the only way I stay sane.
## Appendix A-8
PDAC Data Analysis Summaries - Key Informant - Interview Analysis

### Element No. 1 - Knowledge Management Issues in the Workplace

<table>
<thead>
<tr>
<th>Category</th>
<th>Characteristic</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy and Planning</td>
<td>Strategic planning;</td>
<td>- Commitment to KM infrastructure; how to add strategic value?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- KM initiatives require a senior champion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Articulate a clear understanding of the difference between information and knowledge; companies are very knowledge based; new set of competencies, threats, &amp; opportunities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- How to position information as a value proposition; how to get value from existing information?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Focus on how to manage internal assets as strategic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Everyone is interested - but what is the question?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>What is the vision for KM?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Challenging the status quo - the natural reluctance to change</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Creating a sense of urgency for KM</td>
</tr>
<tr>
<td>Selection of information;</td>
<td></td>
<td>- How to “tap into” the abundance of knowledge reservoirs sitting within the organization</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Guidelines re content selected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Content is the hard part; technology is the easy part</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Some cultural and confidentiality issues re sharing information; not everything should go into a db da</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- How to “share” information across the company</td>
</tr>
<tr>
<td>Human resources</td>
<td></td>
<td>- How to “enable” all staff — to know how/where to find information</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Learning has to be important to the individual, not just to the organization</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Internal learning from others key</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- How to get people to participate in the KM initiative - contribute to the databases</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Complex skills needed - how to find the right people?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Identifying the experts; human factor in content analysis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- People are inspired by stories; who’s doing what and how — what were the impacts</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Category</th>
<th>Characteristic</th>
<th>Comment</th>
</tr>
</thead>
</table>
| Processes and Services | Storage, organization, Retrieval, dissemination; Management | -Because of the many different types of information seeking behaviours — there is no one right answer, no one right information structure  
-Maintain information once selected  
-Authentication issue remain a challenge  
-Administrative structure required to manage KM initiative infrastructures |
| Technology | Systems - Hardware, software, communications | -Information is enabled on a technology platform; finding the right technologies to offer a broader scope of delivery and audience  
-Focused on technology only to realize that content is important  
-Keeping up with the rapid changes in technology offerings  
-Ensuring that solutions are globally “implementable” - same look and feel across the organization  
-Vendor support crucial to success |
| Culture | | -Readiness of people to handle the technology  
-Move from focus on infrastructure to what’s “on” the infrastructure; shift in importance within the culture  
-Establishing a comfort level with technology  
-Understanding the impact of technology changes on people |
| Knowledge Base | Information for decision making | -Understand risk; being marginalized by not seeing the opportunities to evolve and change  
-Need to build “knowledge packs”; databases of information on issues, problems, solutions, customer profiles, etc. |
<table>
<thead>
<tr>
<th>Category</th>
<th>Characteristic</th>
<th>Comment</th>
</tr>
</thead>
</table>
| Organizational Design | Organizational structure; Business impacts; Client impacts; | -Rapid integration of two companies - how to get the information out  
-Position resource centre as broker between various service groups  
-Implementing work groups/team approaches  
-How to be pragmatic about KM, not academic in the organization  
-Changing role increasing profile of info. centre; understanding the role in the organization  
-Understand the power of communication and how it is changing the way people “do” business; lifting geographic barriers  
-Impact of global electronic business; how to distinguish yourself in that environment?  
-Act locally, think globally  
-Velocity of the economy; time to respond shorter; need to sense change more quickly  
-Link new initiatives to the business value proposition  
-How to participate in sustainable development agenda of government  
-Emphasis on partnerships and consortia arrangements; new way of doing business  
-Need to know more about the customer  
-Use customer interactions for a variety of purposes; not just answering the question at the help desk |
| Training | Internal; External | -Amount of training required - both in numbers of people and numbers of systems/tools  
-Taking people form where they are to where you want/need them to be  
-Training the end user on information use, not just technology |
| Evaluation | Decisions; Outcomes | -Commitment to cost; Execs. need to understand the value  
-Understanding the type of KM that is needed; desired outcome identified |
Element No. 2 - Initiatives Underway to Address Challenges and Issues

<table>
<thead>
<tr>
<th>Category</th>
<th>Characteristic</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy and Planning</td>
<td>Strategic planning;</td>
<td>- Intranet KM initiative “backed” by global CKO committee - provides needed money, technology and “will” - Casting a wider net; having a broader vision of the business opportunities - Redefined business focus - Established consortia to maximize benefits - Created a new vision of the business with enabling strategic plan</td>
</tr>
<tr>
<td></td>
<td>Human resources</td>
<td></td>
</tr>
<tr>
<td>Processes and Services</td>
<td>Storage, organization, Retrieval, dissemination;</td>
<td>- Developed proposal database; links to information; documents; presentations; proposals etc. - Created information rich databases on selected, common topics - Created yellow pages database of resources within company</td>
</tr>
<tr>
<td></td>
<td>Management</td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td>Systems - Hardware, software, communications;</td>
<td>- Intranet installed; used for external info access, communications, continuous learning, virtual office, strategic globalization efforts - T1 line makes intranet possible’ Lotus Notes as structure - Over 200 companies are providing different types of KM enabling software tools - Sophisticated security is required - Use standardized tools where ever possible; limits learning curve</td>
</tr>
<tr>
<td></td>
<td>Culture</td>
<td></td>
</tr>
<tr>
<td>Knowledge Base</td>
<td>Information for decision making</td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Characteristic</td>
<td>Comment</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Organizational</td>
<td>Organizational structure;</td>
<td>-Refocused “library” resources creating a business knowledge centre with different, more complex services (value added)</td>
</tr>
<tr>
<td>Design</td>
<td>Business impacts;</td>
<td>-Team approach between IT and content use groups</td>
</tr>
<tr>
<td></td>
<td>Client impacts;</td>
<td>-New job descriptions including elements of KM initiative</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Restructured staff and reporting lines</td>
</tr>
<tr>
<td>Training</td>
<td>Internal</td>
<td>-No “cookie cutter” approach; all new initiatives individually designed to meet customer requirements</td>
</tr>
<tr>
<td></td>
<td>External</td>
<td>-Identified exactly “what” business we are in; clear on our focus and direction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-New electronic commerce companies developing</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Decisions</td>
<td>-Training designed a group - information professional; professional trainer; content expert</td>
</tr>
<tr>
<td></td>
<td>Outcomes</td>
<td>-Training focus on the benefit of use (when, where, how) rather than what; we’re in the education business, not training business</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Internet training</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Designed self assessment tool of competencies</td>
</tr>
</tbody>
</table>
Element No. 3 - Competencies Required by Information Professionals to Meet Challenges in the Workplace

<table>
<thead>
<tr>
<th>Category</th>
<th>Characteristic</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Base</td>
<td>Technology</td>
<td>- General understanding of concepts; directions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Organizing computer use; designing processes</td>
</tr>
<tr>
<td></td>
<td>LIS</td>
<td>- General concepts of information management; overview</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Database design</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Access methods</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Principles of records management</td>
</tr>
<tr>
<td>Information Policy</td>
<td></td>
<td>- Evaluating content</td>
</tr>
<tr>
<td>Business and Organizational Design</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Financial analysis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Business Terms</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Understand various perspectives regarding the business (e.g., management)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Content expertise</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- General business orientation</td>
</tr>
<tr>
<td>Category</td>
<td>Characteristic</td>
<td>Comment</td>
</tr>
<tr>
<td>----------</td>
<td>---------------</td>
<td>---------</td>
</tr>
</tbody>
</table>
| Skills   | General       | -Training and teaching tools designed and evaluated  
|          |               | -People skills  
|          |               | -Communication skills  
|          |               | -Must be broad and transferrable  
|          |               | -Change management  
|          |               | -Writing skills  
|          |               | -Ability to analyze and synthesize information  
|          |               | -"Soft skills"; a blend of managerial, technical and soft  
|          |               | -Political skills |
| LIS      |               | -Management of information in traditional and nontraditional formats  
|          |               | -Knowledge mining  
|          |               | -Creating and managing taxonomies -- controlled vocabulary |
| Technology |               | -Specific software packages; Notes  
|          |               | -Applying LIS skills to new situations |
| Business | General       | -Negotiating skills  
|          |               | -Managing relationships with vendors and customers  
|          |               | -Competitive intelligence  
|          |               | -New product and service design  
|          |               | -Sales techniques; the "internal" sell is just as important |
|          | Business       | -New mindset accepting rapid change  
|          |               | -Ability to anticipate change  
|          |               | -Tolerance for ambiguity  
|          |               | -Ability to work from the abstract to the detail  
|          |               | -Creating passion for a new idea  
|          |               | -Self confidence; ok not to "know" everything!  
|          |               | -Build competencies project by project recognizing that ne skills expire |
Element No. 4 - Profile of Prospective Student for Advanced Educational Opportunities

<table>
<thead>
<tr>
<th>Category</th>
<th>Characteristic</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective for education</td>
<td>Increased Competencies</td>
<td>-Need to expand and build on current expertise to meet new challenges</td>
</tr>
<tr>
<td></td>
<td>Career Advancement</td>
<td></td>
</tr>
<tr>
<td>Profile</td>
<td>Competency background</td>
<td>-Mid-career information professional</td>
</tr>
<tr>
<td></td>
<td>Job position</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>-Suggest a mix of students; One type would limit the perspectives; opportunity to learn from others in the classes</td>
</tr>
</tbody>
</table>
## Element No. 5 - Program Features

<table>
<thead>
<tr>
<th>Category</th>
<th>Characteristic</th>
<th>Comment</th>
</tr>
</thead>
</table>
| Design Element  | Logistics      | - Schedule to fit with heavy workload  
- Can’t wait 3-4 years to implement; launch and learn!  
- Quantify the learning opportunity  
- Use as a convergence of undergrad and grad specialties  
- Use sophisticated website to engage |
|                 | Structure       | - Companies that believe in investing in intellectual capital would support/fund enrolment  
- Credential is important; MBA is already recognized  
- Build on strength of The University branding  
- Use instructors with practical experience  
- Immersive environment  
- Begin with broad shopping list and then focus  
- Capitalize on research strengths of faculty and of The Faculty facilities |
| Content         |                | - Don’t need to cannibalize from other programs; plenty new in the KM area  
- Develop wide purview; don’t develop only in one area  
- Flexibility is the key; position as current and emerging technology and trends develop  
- Focus on pragmatic, business needs; pare down on the academic approach  
- Exposure to wide range of experiences and challenges is necessary |
<table>
<thead>
<tr>
<th>Category</th>
<th>Characteristic</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methodology</td>
<td>Teaching/Learning styles</td>
<td>- Continuous learning approach; tie to company strategy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Peer learning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Base on examples of best practice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Virtual courses work well only for short periods of time; need a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>combination of approaches</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Needs an unstructured environment with structure!</td>
</tr>
<tr>
<td>Approach</td>
<td>Collaborative</td>
<td>- Combine strengths with faculty of management</td>
</tr>
<tr>
<td></td>
<td>Multi-discipline</td>
<td>- Draw on experiences of technology in use in other disciplines</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Merge (hybrid) of content; not two separate degrees</td>
</tr>
</tbody>
</table>
### Element No. 6 - General Advice to the Faculty on Program Development Directions

<table>
<thead>
<tr>
<th>Category</th>
<th>Characteristic</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>Intranets</td>
<td>-Because the intranet looks like the web, people use it more</td>
</tr>
<tr>
<td></td>
<td>Internet</td>
<td>-Frustration with the internet has brought people to the resource centre for help</td>
</tr>
<tr>
<td>The Knowledge Management</td>
<td>Content</td>
<td>-Internal information is more valuable than external information</td>
</tr>
<tr>
<td>Environment</td>
<td>Service</td>
<td>-Value is in what we know, not how many physical resources we own</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Many people don’t know the difference between information and knowledge</td>
</tr>
<tr>
<td></td>
<td>Trends</td>
<td>-Associate KM with a service, not a place</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Look for the story behind the story, why is something happening the way it is — that’s creating knowledge</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-“In flight knowledge” - using knowledge on the fly</td>
</tr>
<tr>
<td>Program Design</td>
<td></td>
<td>-KM is not a passing flavour of the month; note the level of discussions and the dollars assigned to initiatives</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-CIO’s say - how do I navigate; CEO’s say how do I know what we know?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-The Faculty needs a visionary - to prepare employees for the future</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Use principles of KM to solve your program “problem”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Toffler - the name of the game is movement, not position….</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Don’t take a narrow view; given the momentum and the acceleration the sky is the limit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Go for the “killer course”; there is a lot of competition in this arena</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-How to distinguish from others? What’s the added value</td>
</tr>
<tr>
<td>Category</td>
<td>Characteristic</td>
<td>Comments</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Information</td>
<td>Professionals</td>
<td>- The label “librarian” is limiting; use knowledge specialist</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Role of librarians in KM is not widely seen/understood by others</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Dropping the library nomenclature has enabled us to do more within the organization</td>
</tr>
</tbody>
</table>
Appendix A-9
PDAC Report References

LIS Education


Education of Professionals


Curriculum Development in Higher Education


Information and Knowledge Management


Appendix A-10  
Curriculum Design Components  
Drafts 1, 4, 6, and 7

The Faculty Program Directions  
Component Considerations  
Draft #1 - May 1, 1998

Prospective Student and Primary Objective

1. Professional Preparation - introductory for information professionals (bachelor degree completed in wide range of disciplines)

2. Professionals/Middle Managers - Mid career with re-skilling focus to either manage current job or enable career move (may already have a degree or experience in library, business, comp. science)

3. Executive/Senior Managers - CIO/CKO/VP’s/Directors needing to understand complexities of information use strategies in order to make business decisions (may or may not have bach. or grad. degree)

4. Information Entrepreneurs - self employed/small organizations with business directions focused on creating and competing in the knowledge economy

5. Masters students in other University programs wanting to take particular courses from the Faculty program to supplement their primary faculty offerings

Curriculum Content Focus

Information Studies  
Knowledge Management  
Business Management  
Telematics

Policy and Planning  
Human Resources  
Information Technology  
Change Management  
Leadership

Program Structure

Traditional format - full and part time course options; regular calendar  
Exec. MBA format - combination of residency, weekend courses, study groups - modified calendar  
Intensive Sessions - 1-3 week “power” courses  
Workshop - CE model of one or multiple day courses  
Combination
Program Delivery
Onsite at University
Offsite - business or organization (?)
Distance Education - Teleconferencing; web based
Combination

Program Sponsorship/Ownership
The Faculty
The Faculty with collaboration from other faculties (e.g., Management, Comp. Science, Education) for courses and/or sponsorship
The Faculty with sponsorship from industry/organizations/governmentsassociations
New entity formed from collaboration (e.g., institute or centre model)

Program Credential
Note - selected courses
Certificate
Diploma
Graduate Degree - Masters of Information Studies (stream focus)
Graduate Degree - Newly named masters (e.g., Masters of Information Management)

Faculty
The Faculty's faculty
The Faculty's Adjuncts
Faculty from other areas (Management, Education, Comp. Science, etc.)
Instructors - Experts/practitioners in the profession
Combination

Financial Models
Tuition - Self-supporting
Industry sponsorship
Foundation sponsorship
Government grant
University funds and tuition
Combination
Prospective Student and Primary Objective (for taking the program)

1. Professional Preparation - introductory for information professionals (bachelor degree completed in other disciplines)
2. Professionals/Middle Managers - Mid career with up-skilling focus to either manage current job or enable career move (may already have a degree or experience in library, business, comp. science)
3. Executive/Senior Managers - CIO/CKO/VP’s/Directors needing to understand complexities of information use strategies in order to make business decisions (may or may not have bach. or grad. degree)
4. Information Entrepreneurs - self employed/small organizations with business directions focused on creating and competing in the knowledge economy
5. Masters students in other University programs wanting to take particular courses from the Faculty program to supplement their primary faculty’s offerings
6. KM/IM Consultants - credential for those entering the consulting fields of information or knowledge management

Curriculum Content Focus
(Based on Buckland’s definition of information as process and information as knowledge)

Information Management - aspects of information use and application
Culture - beliefs about information
Context - information ecology; information environment
Application - behaviours and processes - sense making; creation of knowledge; decision-making; policy and planning
Politics of information
Information technology and systems - telematics

Business Management
Human Resources
Change Management
Leadership

Program Structure
Traditional format - full and part time course options; regular calendar
Exec. MBA format - combination of residency - “power” courses, weekend courses, study groups - modified calendar
Intensive Sessions - 1-3 week “power” courses
Workshop - CE model of one or multiple day courses
Institute - stand alone or multi-part (sequenced)
Unstructured - Participant directed with time limit guidelines (e.g., Web based courses)
Combination
Pedagogical Approach
(From Fisher & Levene 1989 - See chart attached)
Discipline Structure
Theme/Issue Structure
Problem - Oriented
Competency Based
Student Oriented

Program Delivery
Onsite at University
Off site - business or organization’s facility
Distance Education - Teleconferencing; web based
Combination

Program Sponsorship/Ownership
The Faculty
The Faculty with collaboration from other faculties (e.g., Management, Comp. Science, Education) for courses and/or sponsorship
The Faculty with sponsorship from industry/organizations/governments/associations
New entity formed from collaboration (e.g., institute or centre model)

Program Credential
None - selected courses
Certificate
Diploma
Graduate Degree - Masters of Information Studies (stream focus)
Graduate Degree - Newly named masters (e.g., Masters of Information Management)

Faculty
The Faculty’s Faculty
The Faculty’s Adjuncts
Faculty from other areas (Management, Education, Comp. Science, etc.)
Instructors - Experts/practitioners in the profession
Combination

Financial Models
Tuition - Self-supporting
Industry sponsorship
Foundation sponsorship
Government grant
University funds and tuition
Combination
The following program design components are under consideration by the PDAC in preparing recommendations for the development of a new program at the Faculty.

I. **Prospective Student and Primary Objective** (for taking the program)

Information Professionals - obtaining a career upgrade which enables a broader contribution to the organization through an understanding of KM principles/concepts and the ability to implement a KM process; moving the profession "upstream" in to the design phase (preprocessing and preproduction) of information and knowledge.

Management Professionals - broadening management expertise with an understanding of the basic principles/concepts of KM in order to provide strategic value to an organization through the implementation of a KM process -- the ability to integrate the various KM components and direct or manage either the entire or a portion of a KM initiative.

IS/IT Professionals - expanding an understanding of information technology by learning additional perspectives of information, particularly content and use; moving from a traditionally technology oriented position toward a broader grasp of the integrated components of a KM process.

II. **Curriculum Content Focus**

1. **Information Management** - aspects of information creation, use, and management with a focus on the design rather than use phase.

   Culture - beliefs about information
   Context - information ecology; information environment
   Content - creation, use, management, evaluation
   Application - behaviours and processes - design aspects
   Information policy
   Legal aspects of information
   Politics of information
   Economics of information
   Intellectual capital
   Information technology and systems - tools and techniques - platforms and networks
   Utilizing information technology

2. **Organizational Management** - utilization of information in the workplace with a focus on the elements of the learning organization.

   Overview of basic business/institutional components
Organizational design - with a focus on the impacts of technology
Strategic information uses
Enterprise resource planning
Human resources - managing people as a knowledge asset
Project management components
Leadership skills
Team skills
Change management skills

3. Knowledge Management - utilization of knowledge in an organization based on the elements of the knowing cycle.

Knowledge structure - architecture and design
Knowledge markets
Location, identification, retrieval of information then synthesizing, transforming and presenting knowledge added
Knowledge codification and coordination
Technology tools and structures enabling knowledge management
Knowledge management practice - the knowing cycle: sense making, creation of knowledge, decision making

III. Program Structure

1. Format

Intensive Sessions - 1 to 3 week “power courses”
Workshop - CE model - single and multiple sessions
Institute/Seminar - stand alone 2-3 day sessions or sequence of seminars
Exec. Masters format - combination of residency, distance education, power courses, weekend classes, and study groups on a modified calendar

2. Pedagogical Approach

Broad Fields - related concepts from various disciplines studied.
Problem Oriented - students tackle the problems of the area having learned the facts and concepts required to resolve.
Competency Based - ability to generalize learned skills abilities, attitudes and values as defined in a competency list.

3. Program Delivery

Combination of classroom, onsite at The Faculty and distance education options (video conferencing, web based)

4. Student Evaluation
5. **Program Credentials**

None - selected courses completed without credential
Certificate
Post graduate diploma
Executive masters degree - related to content focus (e.g, Exec. MKM)

6. **Faculty**

Combination of The Faculty’s faculty, The Faculty’s adjunct professors, Faculty from other areas (e.g., Management, Education, Comp. Science)

7. **Program Partnerships**

Forming strategic partners when appropriate to either provide resources, curriculum development, funding support, cooperative research activities. Collaborating with various faculties, industries and organizations appropriate to the particular content focus (e.g., law faculty and information policy issues).

8. **Research Activities**

Informing the program - state of the art
New research generated within/from the program

9. **Financial Models**

A combination of tuition (with the option of being self supporting), industry sponsorship, foundation sponsorships or grants, government grants, University funds.
The Faculty Program Directions Advisory Committee
Program Design Component Considerations
Draft #7 - August 5, 1998

The following program design components are under consideration by the PDAC in preparing recommendations for the development of a new program at The Faculty.

I. **Prospective Student and Primary Objective** (for taking the program)

Information Professionals - obtaining a career upgrade which enables a broader contribution to the organization through an understanding of KM principles/concepts and the ability to implement a KM process; moving the profession “upstream” in to the design phase (preprocessing and preproduction) of information and knowledge.

Management Professionals - broadening management expertise with an understanding of the basic principles/concepts of KM in order to provide strategic value to an organization through the implementation of a KM process -- the ability to integrate the various KM components and direct or manage either the entire or a portion of a KM initiative.

IS/IT Professionals - expanding an understanding of information technology by learning additional perspectives of information, particularly content and use; moving from a traditionally technology oriented position toward a broader grasp of the integrated components of a KM process.

II. **Curriculum Content Focus**

1. **Information Management** - aspects of information creation, use, and management with a focus on the design rather than use phase.

   Culture - beliefs about information  
   Context - information ecology; information environment  
   Content - creation, use, management, evaluation  
   Application - behaviours and processes - design aspects  
   Information policy  
   Legal aspects of information  
   Politics of information  
   Economics of information  
   Intellectual capital  
   Information technology and systems - tools and techniques - platforms and networks  
   Utilizing information technology

2. **Organizational Management** - utilization of information in the workplace with a focus on the elements of the learning organization.

   Overview of general business/institutional components
Organizational design - with a focus on the impacts of technology
Strategic information uses
Enterprise resource planning
Human resources - managing people as a knowledge asset
Project management components
Leadership skills
Team skills
Change management skills

3. **Knowledge Management** - utilization of knowledge in an organization based on the elements of the knowing cycle.

Knowledge structure - architecture and design
Knowledge markets
Location, identification, retrieval of information then synthesizing, transforming and presenting knowledge added
Knowledge codification and coordination
Technology tools and structures enabling knowledge management
Knowledge management practice - the knowing cycle: sense making, creation of knowledge, decision making

III. **Program Learning Objectives**

1. Knowledge of the evolving information technology and knowledge management environment within the organizational design.

   The social and political trends, attitudes, and culture which sustain and evolve the knowledge management and information technology environment.

2. Knowledge of the creation, use, and management of information and knowledge as strategic processes within the organization.

   The operational and architectural components of the content and technology which form the components of the knowledge management process.

3. Ability to design and implement knowledge management strategies in order to facilitate the effective use of knowledge for sense making, creating new knowledge, and decision making.

   The skills required to analyze needs, design solutions, and implement the change in order to create a process where knowledge can be strategically used within the organization.

4. Development and enhancement of management and leadership skills.
The abilities and skills which support the role of the professional such as leadership skills, team skills, change management, project management, effective communication and presentation, and human resources management.

IV. Program Structure

1. Format

Intensive Sessions - 1 to 3 week “power courses”
Workshop - CE model - single and multiple sessions
Institute/Seminar - stand alone 2-3 day sessions or sequence of seminars
Exec. Masters format - combination of residency, distance education, power courses, weekend classes, and study groups on a modified calendar

2. Pedagogical Approach

Broad Fields - related concepts from various disciplines studied.
Problem Oriented - students tackle the problems of the area having learned the facts and concepts required to resolve.
Competency Based - ability to generalize learned skills abilities, attitudes and values as defined in a competency list.

3. Program Delivery

Combination of classroom, onsite at the Faculty and distance education options (video conferencing, web based)

4. Student Evaluation

Group and Class Discussions
Role Plays
Application exercises
Presentations
Term papers or essays
Research studies
Projects - case studies
Tests or exams
Self-evaluation

5. Program Credentials

None - selected courses completed without credential
Certificate
Post graduate diploma
Executive masters degree - related to content focus (e.g, Exec. MKM)
6. **Faculty**

Combination of the Faculty's faculty, the Faculty adjunct professors, faculty from other areas (e.g., Management, Education, Comp. Science), and Instructor - experts/practitioners in the profession

7. **Program Partnerships**

Forming strategic partners when appropriate to either provide resources, curriculum development, funding support, and/or cooperative research activities. Collaborating with various faculties, industries and organizations appropriate to the particular program content focus (e.g., law faculty and information policy issues).

8. **Research Activities**

Informing the program - state of the art
New research generated within/from the program
University/Industry/Organization collaboration

9. **Financial Models**

A combination of tuition (with the option of being self supporting), industry sponsorship, foundation sponsorships or grants, government grants, and/or the University funds.
PDAC Position Paper

The Faculty Portfolio of Programs:
Directions and Differences Between the MISt Degree Program and the New Curriculum

Faculty - Overview of Programs

The Faculty has an extensive range of academic and curriculum-related programs. The portfolio of programs includes: the Masters in Information Studies Degree Program (MISt); the Doctor of Philosophy (Ph.D.); a Health Sciences Certification; and, collaborative programs between the Faculty and Women's Studies and between the Faculty and The Institute for Study in Addiction and Alcohol Research. In addition, the Faculty offers the largest LIS CE program in Canada with a combination of individual courses and certificate programs on current topics. The Faculty is also home to the Program in Culture and Technology, is a founding member of the Institute, and the Faculty’s faculty have been instrumental in establishing the Centre for the Book.

The Faculty Mission:

The Faculty is committed to being an internationally significant Faculty providing excellent professional education based on an understanding of the theory and practice underlying information generation, organization, and use, and to the stimulation and dissemination of research.

The Faculty Goals:

1. To educate information specialists who can respond to the changing information practices and needs of society, and to that end, to establish and maintain educational programs with academic standards appropriate to the University.

2. To contribute, through research and publication by both faculty and students, to the continuous expansion and critical assessment of the body of knowledge underlying the information and archives sciences.

3. To participate in the development of theory concerning information, where it is found, and how it is used, and in the application of new technological developments to the preservation and communication of information, and in the identification of the impact of such developments on society.

4. To provide leadership in defining the social responsibility of information professionals to provide information services for all, regardless of age, education level or social, cultural or ethnic background.
5. To assist information professionals to review and assess the body of knowledge of librarianship, archives administration and information systems as an integral part of their professional work by providing and supporting opportunities for continuing education in the Faculty.

6. To maintain liaison with professionals and professional associations, to develop a national and international role for the Faculty and to pursue avenues of mutual cooperation.

7. To contribute to the realization of the goals of the University with respect to the creation, dissemination and preservation of knowledge, and to this end, as a part of the University, participate in its various academic, administrative, and institutional activities.

The Masters in Information Studies Degree Program

Goals:

The goals for the MIST Degree Program are as stated in the Faculty Goals listed above.

Program Content Focus:

Based on the theory and practice of the field of information studies, the MIST has three specializations focused by content area: archival studies, information systems, and library and information science. The program shares a core of basic courses in information studies relevant to all three streams and provides a range of courses specific to the areas of specialization. The program focus is on information as resource object; the acquisition, storage, organization and retrieval of information. In addition, there is an emphasis on access from the point of view of individual, equitable rights and on the information technology infrastructures which support many aspects of information studies.

Audience:

Introductory training in the fundamentals of information science in order to obtain entry level positions where basic competencies are required.

Program Structure:

Format follows standard masters program practice with traditional courses following the regular university calendar and obtaining an MIST degree.

The New Curriculum

Goals:
Consistent with the Faculty mission and goals, the new program will strive:

1. To educate information professionals, IS/IT professionals, and management professionals responsible for or interacting with information and knowledge process initiatives providing them with the competencies to anticipate and respond to the changing needs of their organizations.

2. To contribute, through teaching, research, and publication to the continuous development of the field of knowledge management and the role of information technology as an enabling tool.

3. To participate in the development of theory concerning information and knowledge with an emphasis on the pre-production and design phase of creation, use, and application of content as well as the enabling role of information technology.

4. To provide leadership in defining policy, procedures, and practice for the ethical and responsible use of knowledge in organizations and society.

5. To assist information professionals and management professionals in broadening their competencies in a manner consistent with life long learning goals and the need to progress with the changing information and knowledge environment.

6. To increase liaison with government, industry, the public sector, and related professions in order expand the opportunity to collaborate with disciplines and sectors which converge in the provision and use of information and knowledge processes and services.

Program Content Focus:

Based on a hybrid of information studies and management, the New Curriculum focuses on the emerging field of knowledge management with an emphasis on how information and knowledge are utilized within organizations. The New Curriculum has three streams focused on the role of the professional: the information professional, the IS/IT professional, and the management professional.

Audience:

Advanced training for senior managers (information professionals, IS/IT professionals, and management professionals) as mid-career upgrades in order to build on and expand competencies obtained in prior masters studies, through life experience, and/or from experience in organizational culture.

Program Structure:

Format follows a variety of models with a modular focus: short, intense courses; seminars or institutes; distance education delivery; and, extended more traditional courses. A range of
learning experiences obtained through case based problem solving culminates in a certificate, post-graduate diploma, or an executive-type masters degree depending on the chosen program.

**Figure 3. - MIS and New Curriculum Differences**

<table>
<thead>
<tr>
<th>Element</th>
<th>MIS Program</th>
<th>New Curriculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>Entry level - First professional degree</td>
<td>Mid to Advanced level - post graduate</td>
</tr>
<tr>
<td>Program Design Focus</td>
<td>Subject/content areas: archives, information systems, library and information science</td>
<td>Learner: LIS professionals; IS/IT professionals; management professions</td>
</tr>
<tr>
<td>Program Content Focus</td>
<td>Operational and Structural; Information Management</td>
<td>Strategic and Architectural; Knowledge Management</td>
</tr>
<tr>
<td>Program Structure</td>
<td>Traditional course design that follows university calendar</td>
<td>Combination of course structures; intense-short courses, distance delivery; institutes; extended courses</td>
</tr>
<tr>
<td>Program Credential</td>
<td>Masters of Information Studies</td>
<td>- CE Certificate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Post Graduate Diploma</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Masters in Knowledge Management</td>
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</tbody>
</table>
Appendix -12
PDAC Goal and General Recommendations

Recommendations - Program Options Section of Final Report
Draft #1 - August 4, 1998

General Recommendation:
Option #1

Based on the analysis of evidence collected through interviews and surveys with information professionals and employers, market and competitive research, a review of the literature on trends in information studies and professional preparation, and a survey of the Faculty alumni, the PDAC recommends that the Faculty begins to develop a portfolio of programs based on the concepts and principles of knowledge management and organizational design which will provide mid-career information professionals and other senior managers with the opportunity to obtain a comprehensive range of competencies which are required to compete in a global, technology enabled, knowledge based economy.

Option #2

Based on the analysis of evidence collected through interviews and surveys with information professionals and employers, market and competitive research, a review of the literature on trends in information studies and professional preparation, and a survey of the Faculty alumni, the PDAC recommends that the Faculty begins to develop a portfolio of programs based on the concepts and principles of knowledge management and organizational design. This selection of educational opportunities should be focused on the mid-career information professional and other senior managers who are seeking professional training at an advanced level in order to obtain a comprehensive range of competencies which are required to compete in a global, technology enabled, knowledge based economy.

Option #3

Given the analysis of evidence collected by the PDAC, the committee recommends that the Faculty begins to develop a portfolio of programs which is based on the concepts and principles of knowledge management and organizational design and which are intended to provide advanced professional training with appropriate credentials for mid-career information professionals and other senior managers who require a comprehensive range of competencies in order to compete in a global, technology enabled, knowledge based economy.

Given the analysis of evidence collected by the PDAC, the committee recommends that the Faculty begins to develop a portfolio of programs which is based on the concepts and principles of knowledge management and organizational design and which are intended to provide advanced professional training with appropriate credentials for mid-career information professionals and other senior managers who require a comprehensive range of competencies in order to compete in a global, technology enabled, knowledge based economy.
Appendix A-13
PDAC Recommendations and Rationales

Draft #4-Final
Sept. 5, 1998

General Recommendation:

Given the analysis of evidence collected by the Program Development Advisory Committee (PDAC), the Committee recommends that the Faculty of Information Studies develop a portfolio of programs which will provide advanced professional training with appropriate credentials for mid-career information professionals, information system and information technology (IS/IT) professionals, and management professionals. The programs’ curricular focus should be based on the principles and concepts of knowledge management and should be offered in a modular, flexible structure which includes a case-based problem solving approach. The goal of the programs would be to provide educational opportunities for professionals who require a comprehensive range of competencies in the area of knowledge management in order to effectively contribute to organizations in a global, technology-enabled, knowledge-based economy.

Specific Recommendations:

The Faculty of Information Studies should:

1. Develop a portfolio of programs which addresses current issues in knowledge management and meets the needs of a diverse range of information and management professionals.

Rationale:

Given the complexity of information and knowledge management, the wide range of professionals involved in directly managing information and knowledge processes as well as using information and knowledge in their work, and the varying options desired for obtaining further education and credentials, no single program could meet the need of this community of professionals. This initiative represents a bold, aggressive step for the Faculty which would reaffirm the faculty’s mission, build on the Faculty’s progressive curriculum development initiatives, and establish the Faculty as an international leader in the evolving field of library and information science professional education.

2. Establish goals for the program which include:

2.1 To educate information professionals, IS/IT professionals, and management professionals responsible for or interacting with information and knowledge process initiatives providing them with the competencies to anticipate and respond to the dynamics of information and the changing needs of their organizations.
2.2 To contribute, through teaching, research, and publication to the continuous development of the field of knowledge management and the role of information technology as an enabling tool.

2.3 To participate in the development of the theory and concepts of information and knowledge processes defined as a continuum of activities related to information as content with an emphasis on the creation phase and the use phase as well as the enabling role of information technology.

2.4 To provide leadership in defining policy, procedures, and practice for the ethical and responsible use of knowledge in organizations and society.

2.5 To assist information professionals and management professionals in broadening their competencies in a manner consistent with life long learning goals and the need to progress with the changing information and knowledge environment.

2.6 To increase liaison with government, industry, the public sector, and related professions in order to expand the opportunity to collaborate with disciplines and sectors which converge in the provision and use of information and knowledge processes and services.

Rationale:

These goals were deliberately written to mesh with the goals which have already been established by the Faculty. The proposed new portfolio of program builds on existing strengths while expanding the Faculty’s program offerings with a new range of prospective students, a new dimension in content, and a new program structure. The Faculty is thus strengthened by increasing its diversity through attracting new students and faculty as well as continuing to develop the knowledge base in an evolving field of study.

With the new programs, the Faculty would be creating “bookends” to complete a full continuum of programs on information and knowledge management using the existing MISt degree as the foundation element. By “book ends”, we mean adding programs to the “beginning” of the continuum with a focus on pre-production or pre-process activities (i.e., planning, design, creation, and production) and then to the “end” with a focus on the application or use of information and knowledge (i.e., analysis, synthesis, and presentation). These components would be centered around the current MISt direction (i.e., acquire, organize, store, retrieve, disseminate, preserve) as illustrated below:

<table>
<thead>
<tr>
<th>Creation</th>
<th>Management</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan, design, create, produce</td>
<td>Acquire, organize, store, retrieve, disseminate, preserve</td>
<td>Analyze, synthesize, evaluate, package, present</td>
</tr>
</tbody>
</table>

3. Within the portfolio of programs, develop programs for three professional groups who share a common goal (the effective creation, management, and use
of information and knowledge, but who also have separate objectives for their continued education:

3.1 **Information Professionals.** Objectives: to obtain a career upgrade which enables a broader contribution to their organizations through an understanding of the knowledge management process and the tools required to design, implement and maintain a knowledge management initiative; to move the professionals' key activities "upstream" to the creation and use phases of information and knowledge; and, to build on the competencies learned in previous library and information studies programs by transferring and enriching these competencies to new situations.

3.2 **IS/IT Professionals.** Objectives: to build on an existing understanding of information technology by learning the elements of additional perspectives of information, particularly content creation and use; to move from a traditionally technology-oriented position toward a broader grasp of the integrated components of the knowledge management process.

3.3 **Management Professionals.** Objectives: to broaden management expertise with an understanding of the basic principles and concepts of knowledge management in order to provide strategic value to an organization through the implementation of a knowledge management initiative; to design, implement, maintain and/or evaluate a knowledge management process which is incorporated into the organization's processes.

Rationale: The current MIST Degree Program has attracted graduate students with a diverse range of backgrounds, subject expertise, and skills. The new portfolio of programs continues this theme with the addition of a focus on the management professional as one of the groups targeted by the new programs. Central to the discussions of the PDAC members was: WHO is experiencing a needs gap? WHO is looking for updating and expanding their competencies? WHO are the professionals responsible for the management of information and knowledge processes? In an effort to narrow our focus in order to target resources, three broad categories of professionals were identified. Because each of these categories has different needs for obtaining further education, it was natural to identify the learner as the centre of the programs' design.

4. **Establish a series of learning outcomes which reflect an advanced degree of depth in competency as required by senior professionals in the following four areas:**

4.1 Knowledge of the evolving information technology and knowledge management environment within an organization's design. The social and political trends, attitudes, and culture which sustain and evolve the knowledge management and information technology environment.

4.2 Knowledge of the creation, use, and management of information and knowledge as strategic processes within the organization. The operational and architectural
components of the content and technology which form the components of the knowledge management process.

4.3 Ability to design and implement knowledge management strategies in order to facilitate the effective use of knowledge for constructing meaning, creating new knowledge, and decision making. The skills required to analyze needs, design solutions, and implement the change in order to create a process where knowledge can be strategically used within the organization.

4.4 Development and enhancement of management and leadership skills. The abilities and skills which support the role of the professional such as leadership skills, team skills, change management, project management, effective communication and presentation, and human resources management.

Rationale: The PDAC research data and the literature confirm that not only is the role of the information professional expanding, but groups of professionals who are not traditionally associated with information studies are now concerned with the benefits of information and knowledge management processes. The proposed learning outcomes reflect the need to build on the traditional acquire, organize, store, retrieve, disseminate and preserve skills of library and information science and archival studies by adding competencies on either side of a competency continuum. The level of competencies would reflect the advanced-level needs of senior professionals, those most likely in middle to senior management positions. The new portfolio of programs focuses on competencies needed for the creation phase (i.e., planning, designing, producing) and the use phase (i.e., analyzing, synthesizing, evaluating, and presenting) thus completing the continuum of the value-add process of information to knowledge.

5. Within the portfolio of programs, there should be a core of three content streams which would be applied, as appropriate, in the development of each program’s curriculum. Topics for each of these three streams might include:

5.1 Information Management - the aspects of information creation, management, and use. Topics include:
- Culture - beliefs about information
- Context - information ecology; information environment
- Content - creation, use, management, evaluation
- Application - behaviours and processes - design aspects
- Information policy
- Legal aspects of information
- Politics of information
- Economics of information
- Intellectual capital
- Information technology and systems - tools and techniques - platforms and networks
- Utilizing information technology
5.2 **Organizational Management** - the utilization of information in a learning organization. Topics include:
- Overview of general business/organizational components
- Organizational design - how the elements or an organization are defined with a focus on the impacts of technology
- Strategic information uses
- Enterprise resource planning and budgeting
- Human resources - managing people as a knowledge asset
- Communication of information and information needs
- Project management components
- Leadership skills
- Team skills
- Change management skills

5.3 **Knowledge Management** - the utilization of knowledge in an organization based on the principles and concepts of knowledge management and the elements of the knowing cycle. Topics include:
- Knowledge structure - architecture and design
- Knowledge markets
- Location, identification, retrieval of information then synthesizing, transforming and presenting knowledge added
- Knowledge codification and coordination
- Technology tools and structures enabling knowledge management
- Knowledge management practice - the knowing cycle: sense making, creation of knowledge, decision making

Rationale: Knowledge management is not an isolated activity. It builds on systems of data management and information management. It also draws on processes which add value to an organization by identifying the audiences of interest and understanding their objectives. Central to these three management areas (information management, organizational management, and knowledge management) is a technology infrastructure which enables the information and knowledge management processes. The curriculum focus builds on the recognized taxonomy of information (i.e., data/information/knowledge) combined with information and knowledge creation, management, and use within a learning organization. In suggesting these topics, the Committee provides an overview of content direction on which a subsequent curriculum development team would base the development of specific courses for the various programs within the proposed portfolio.

6. **Create a structure for each of the programs in the portfolio which reflects the learning needs of advanced, mid-career professionals using the following design components:**

6.1 **Course Format** - a modular, flexible approach to the course structure which would include:
- Intensive Sessions - 1 to 3 week “power courses”
- Workshop - CE model - single and multiple sessions
Institute/Seminar - stand alone 2-3 day sessions or sequence of seminars
Exec. Masters format - combination of residency, distance education, power courses, weekend classes, and study groups on a modified calendar

6.2 Pedagogical Approach - a combination of three approaches:
Broad Fields - related concepts from various disciplines studied.
Problem Oriented - students tackle the problems of the area having learned the facts and concepts required to resolve.
Competency Based - ability to generalize learned skills abilities, attitudes and values as defined in a competency list.

6.3 Program Delivery - a combination of onsite classes at The Faculty and distance education options (video conferencing, web based, etc.)

6.4 Applicant Qualification - a process which evaluates the applicant's previous education and experience as well as current work challenges to ensure both an ability to function at an advanced level and to contribute to the team problem-solving learning approaches.

6.5 Student Evaluation - a combination of group and class discussion participation, application exercises, presentations, term papers or essays, research studies, projects or case studies, tests or exams, and self-evaluation.

Rationale: Since the target audience for the new curriculum has been identified as mid-career professionals seeking an upgrade to or expansion of existing competencies in order to meet job challenges, the programs must be designed to not only provide relevant, practical experiences but also to provide a flexible structure which facilitates participation while continuing to work. In addition, the nature of the programs' content (i.e., the rapid changes in the fields of information and knowledge management and information technology) suggests that a flexible, modular approach to program structure is required in order to remain current, if not in front of trends. To that end, the proposed structure is based on an executive style of education with the expectation that course content will change from year to year and that the learning/teaching style will be based on a case-based problem solving approach in order to provide relevance to current challenges in the program participants' organizations.

7. Within the portfolio of programs, provide a range of credentials which includes:
    a continuing education Certificate in Knowledge Management, a Post-Graduate Diploma in Knowledge Management, and an Executive Masters Degree in Knowledge Management.

Rationale: Given that the target audiences' objectives for taking the new programs are diverse, there should be a range of credentials offered. The PDAC recognizes that offering this range of credentials will require additional resources. However, the benefits of providing these options are many. The programs are designed to encourage continued education. A participant might take a CE workshop or institute and decide to pursue a full certificate or degree program at a later date. A senior executive might participate in an institute and see the
value of sending a senior manager to either another institute or sponsoring participation in a full program. Participants who are unable to commit to a full program can obtain competencies from taking single workshops which have the most relevancy to their current situation. Not only is this approach of benefit to the participant, it is all of benefit to the faculty in managing governance requirements while designing and implementing the full range of proposed programs. The Faculty could decide to implement the programs in phases, first creating interest through workshops and institutes then moving to a one year graduate diploma while proposing a full masters degree. As the needs of the target audience change and/or new target audiences are identified, the portfolio of programs and corresponding credentials could change. The PDAC also recognizes that in some instances, no credential may be required. A student might wish to participate in workshops or institutes on an as need basis; however, the Committee recommends that diploma and degree programs include only those participants who are registered for an entire program.

8. Utilize a variety of professionals to teach in the portfolio of programs who have an expertise in the principles and concepts of information and knowledge management. This expertise may have been acquired through recent experience working in the field as a focus area of research or as the basis of employment responsibilities. The programs’ “faculty” should be comprised of a combination of: The Faculty’s faculty; the Faculty’s adjunct professors; Faculty from other University departments, programs, centres, or institutes; and, experts and practitioners.

Rationale: In order to provide comprehensive, relevant programs, there must be an emphasis on both theory and current practice. Given the learning objectives of the various targeted professional groups, the faculty teaching in the programs should also be diverse with a combination of leading-edge researchers and practitioners with relevant experience in the design, implementation, and evaluation of information and knowledge processes and initiatives.

9. Form strategic partnerships in order to provide resources (staff and material), curriculum development planning, funding support, and/or cooperative research activities. These partnerships would take the form of a collaboration with various faculties, industries, and organizations as appropriate to the particular program content focus (e.g., law faculty and information policy issues).

Rationale: Traditionally, library and information science (LIS) professionals have been stereotyped as masters of a physical, often print domain. Repositioning traditional services in the information age has not resulted in significant changes to the stereotype even with an emphasis on marketing a new image and range of competencies by professional associations and professional preparation programs or through the efforts of individual professionals in their organizations. As knowledge management moves to the forefront, there is significant competition for providing programs. The PDAC recommends that the Faculty take a collaborative approach in the programs’ design and implementation in order to establish maximum recognition and create credibility beyond the traditional LIS markets. We have
discussed the need for a degree with the equivalent cachet of an MBA. Partnerships with the business community, government, and management faculties will further the Faculty's continued efforts to recognize the critical importance of LIS competencies as the basis for successful knowledge management initiatives. In addition, a the Faculty collaborative approach provides a parallel to the environment in which professionals must function. With the increasing number of joint ventures, collaboration is at the centre of an emerging paradigm which is rapidly becoming an accepted "way of life" for organizations.

10. **Encourage the continued contribution to the development of theory and practice concerning knowledge management through research activities.**

Rationale: The literature in LIS education and professional practice continues to discuss the possible convergence of library and information science, archives and records management studies, and engineering and computer science to meet the challenges of a global, technology-enable, knowledge-based economy. The Faculty continues to be a leader in innovative professional preparation with the MIST Degree Program. With the introduction of these proposed new programs which combine the fields of information management, organizational management, and knowledge management while recognizing the importance of a information technology infrastructure to enable the processes, the Faculty has the opportunity to expand that leadership role. No other professional preparation school is currently offering this aggressive, diverse approach. By doing so, the Faculty stands to add significantly to the research which is shaping this evolving field of study.

11. **Establish appropriate financial models to develop and enhance the portfolio of programs through a combination of student tuition, industry sponsorship, foundation sponsorships or grants, government grants, and/or the University funds. There should be the option of designing any given program as either self-supporting or revenue generating.**

Rationale: The PDAC realizes that it is unlikely that the Faculty could obtain a budget to design and implement this portfolio of programs solely from the University funds. The collaborative approach outlined in recommendation #9 suggests that budget dollars and/or program resources could be obtained from program partners or foundations funding curriculum development initiatives. In addition, there is the option to make all programs self-supporting, but seed money would be required to get the programs running. Implementing the programs in phases would reduce the initial amount of investment required. Further information on implementation budgets and funding sources is located in the Business Plan section of this report. However, the PDAC encourages the Dean to make a presentation to the Provost outlining a plan to significantly increase the portfolio of programs offered by The Faculty, an activity which would be based on a new Academic Plan. The PDAC also encourages the Dean to actively seek federal funding which has recently become available to support the labour market demand for information professionals.

12. **Validate the proposed new program directions, its curriculum components (content, design structure, methodology), and the target market (information
professionals, IS/IT professionals and management professionals) in a practical approach by offering an institute which might include the following elements:

12.1 **Theme:** Organizations have always relied on the knowledge of their staff to achieve success. However, changes in organizational design and advancements in technology combined with the need to think globally have stimulated the development of knowledge management processes and focused attention on the need for knowledge in order to make better decisions. To be successful (some argue even to continue to exist), organizations that are operating within a global, technology-enabled, knowledge based economy must understand how to manage their knowledge assets by establishing the environment, the management systems and processes, and the human resources teams to create and effectively use knowledge.

12.2 **Topics:** Knowledge management, information management, technology infrastructures and tools, human and material resources as assets, organizational design and culture, information policy development, and the economics of knowledge.

12.3 **Purpose:** This institute will provide a forum for learning from examples of best practice, the latest industry research, and insights of expert practitioners on the topic of knowledge management framed by the organizational knowing cycle which consists of three uses of knowledge: constructing meaning, creating new knowledge, and making decisions. Participants will work through a knowledge management case study to develop a design and implementation strategy while learning the theory and the practice of the knowledge management process from their team members, case leader, and subject specialists.

Rationale: The PDAC recognizes the risks of designing and implementing a series of programs based on knowledge management which some call simply the latest management trend. However, our research suggests that a natural progression of the information age is toward a recognition of the importance of knowledge management. We believe that the Faculty’s experience in curriculum development, and its ability to manage change combined with the collective range of faculty expertise and research interests provide a firm foundation for expanding its portfolio of programs. Prior to committing substantial resources, the PDAC recommends that the Faculty pursue a test situation, a proof of concept, through an institute as outlined above with further information in Appendix ____. The Institute announces the Faculty’s intention to pursue further program development, creates interest in pursuing the program once implemented, provides feedback on the elements of the programs’ design, creates new and strengthens existing partnerships, and adds to the research on knowledge management as a field of study for professional preparation.
Appendix A-14
PDAC Business Case Outline

The Business Plan

I. Opportunity Analysis

A. Program Opportunity
   1. Introduction of KM
      A. No educational leaders
      B. Opportunities to shape discipline
      C. Opportunities to build on IS principles and skills
   2. Government initiatives
      A. Connecting Canadians
      B. HRDC and ALARM competencies
      C. Job market for information professionals
   3. Continuous learning acceptance
   4. Mid-career upgrades
      A. Is an MBA “right” for me?
      B. Building on existing strengths/competencies
   5. Shift from technology to content - Moschella Waves of Power
   6. Evolving LIS world
      A. The Faculty’s established leadership
      B. The Faculty’s acceptance of change
      C. The Faculty size - small, flexible, will and energy of Dean

B. Key benefits
   1. Extend range of The Faculty offerings
   2. Attract diverse students - peer learning
   3. Attract leading edge researchers
   4. Establish leadership role: in LIS community, within The University, educational trends, growth of discipline
   5. Strengthen ties with public and private sector employers
   6. Strengthens MIST program

II. Market Analysis

A. Target Markets
   1. Library and Information Professionals
   2. IS/IT Professionals
   3. Management Professionals

B. Programs
   1. LIS
   2. Engineering and Computer Science
   3. Management
   4. Non-academic
C. Pricing
D. Competitive Analysis

III. Portfolio of Programs Design

A. Organization and governance structure
   1. Possible models

B. Alliances
   1. The University Faculties
   2. Corporate Information Sector
   4. Other Canadian Universities

C. Critical success factors
   1. Engage Provost in design/direction vision
   2. Establishing as The Faculty priority
   3. Progressive curriculum development team - all program components
   4. Strategic Alliances: Collaborative approach with other faculties; Corporate partnerships; government tie in
   5. Learner focus - flexibility in content, delivery approach
   6. Credibility for credentials
   7. Leading edge instructors
   8. Student evaluation of programs
   9. Facilities
   10. Communication strategy
   11. Establish branding; dump library stereotype
   12. Institute

D. Financial Analysis

E. Communication Plan

   1. Objectives
   2. Key messages
   3. Communication strategies

F. Implementation Plan

   1. Institute Planning
   2. Curriculum Development Team
      A. Graduate Diploma
         Midcareer upgrade; not wanting the rigor of another Masters Competency upgrade
         Short lived program?
      B. Executive MKM
Institute Outline

The structure of the proposed institute is modeled after a "tried and true" format of intensive, short-course management training. Several options for the exact scheduling are offered, and there are other variations on that structure which might be adopted. Because the institute is proposed as a proof of concept for the portfolio of programs, it is imperative that the institute be planned and implemented within the next six months. The PDAC recommends that the institute be planned as a component of the existing The Faculty Continuing Education program. An organizational structure is suggested which employs a part-time institute director who would be responsible for the design and implementation of the institute and managing the sponsorship negotiations. Support from existing The Faculty administrative staff would also be required.

Working Title:

Information to Knowledge: Creating, Using and Managing the Connections
Tag line: The Knowledge Management Process -- Creating a Sustainable Competitive Advantage

Theme:

Organizations have always relied on the knowledge of their staff to achieve success. However, changes in organizational design and advancements in technology combined with the need to think globally have stimulated the development of knowledge management processes and focused attention on the need for knowledge in order to make better decisions. To be successful (some argue even to continue to exist), organizations that are operating within a global, technology-enabled, knowledge based economy must understand how to manage their knowledge assets by establishing the environment, the management systems and processes, and the human resources teams to create and effectively use knowledge.

Key topics include: knowledge management, information management, technology infrastructures and tools, human and material resources as assets, organizational design and culture, information policy development, and the economics of knowledge.

Purpose:

This institute will provide a forum for learning from examples of best practice, the latest industry research, and insights of expert practitioners on the topic of knowledge management framed by the organizational knowing cycle which consists of three uses of knowledge: constructing meaning, creating new knowledge, and making decisions. Participants will work through a knowledge management case study to develop a design and implementation strategy while learning the theory and the practice of the knowledge management process from their team members, case leader, and subject specialists.
Institute Objectives:

1. To provide a forum, in a collaborative nature, where university, government, and the private and public sectors, can work together to further define the principles and concepts of knowledge management as a process which enhances the performance of organizations.

2. To further explore the emerging field of knowledge management which is based on elements from the disciplines of information science, management, and engineering and computer science.

3. To establish the Faculty, the University, and institute partners as leaders in providing executive knowledge management and information technology education.

Participant Learning Objectives:

The institute participants will learn through intensive problem solving exercises and presentations:

1. Knowledge of the evolving information technology and knowledge management environment within the organizational design. - The social and political trends, attitudes, and culture which sustain and evolve the knowledge management and information technology environment.

2. Knowledge of the creation, use, and management of information and knowledge as strategic processes within the organization. - The operational and architectural components of the content and technology which form the components of the knowledge management process.

3. Ability to design and implement knowledge management strategies in order to facilitate the effective use of knowledge for sense making, creating new knowledge, and decision making. - The skills required to analyze needs, design solutions, and implement the change in order to create a process where knowledge can be strategically used within the organization.

4. Development and enhancement of management and leadership skills. - The abilities and skills which support the role of the professional such as leadership skills, team skills, change management, project management, effective communication and presentation, and human resources management.

Audience:

Senior managers from information intensive organizations who require strategic information and knowledge skills in order to make better decisions. The goal is to have a cross section of professionals to ensure learning from the varied practical experience of all institute
participants. Targeted at information professionals, management professionals, and IS/IT professionals who want to broaden their respective backgrounds with an understanding of the principles of knowledge management as strategic value to their organizations.

**Participant Benefits:**

1. Latest issues in information and knowledge management addressed.
2. Experts in information technology, organizational design, and knowledge management as mentors and presenters.
4. Practical, results-oriented, case based learning approach -- application of critical thinking and problem solving skills in a team work group.
5. Diverse, cross industry participants

**Structure:**

Proven educational model of: work teams, case-based learning with emphasis on problem solving through the analysis, synthesis and evaluation of information provided by topic experts over a 3-4 day intensive, residential session. Estimated number of participants is 30-35 working in teams of 5 with a case leader/mentor resource.

**Option 1 - 3.5 days**

Day 1 - Welcome, objectives, structure, team building exercises, case study outline, resources outline, identifying the problem(s), strategy for problem solving; key note speaker, case work, dinner speaker
Day 2 - Case work, 2 - 3 speakers
Day 3 - Case work - presentation of key issues/hurdles, 2 speakers; dinner speaker, evening case work
Day 4 (half day) - Case presentations and evaluation, institute evaluation, wrap up reception.

**Option 2 - 3.5 days**

Day 1 - (half day) - Evening reception; welcome, structure outlined, team building exercises.
Day 2 - Case study outline, resource outline, key note speaker, identifying the problem(s), strategy for problem solving; dinner speaker, case work.
Day 3 - Case work, presentation of key issues/hurdles; 2 speakers, evening case work
Day 4 - Case work, case presentations and evaluation, institute evaluation, wrap up reception.

**Resources:**

Mentors/Case Leaders - guide process; keep critical thinking moving; provide roadblocks and bridges - one per group (6-7)
Speakers - key note (1), case evaluation/summary (1), plus specialists in various topics (4-6)
Support - Inforum; Dean's office; The Faculty students
Institute staff - director, administrative support
Facility:

Suite hotel (i.e., Plaza II or residential conference setting such as Eaton Hall).

Funding:

Participant registration
Industry sponsorships
Foundation grants

Estimated Cost:

The final registration cost will depend on the amount of sponsorships secured to address the expenses. However, a competitive rate is $2,000 - 2,500 plus travel expenses. See proposed budget for further information.

Locations:

The institute structure allows for the repeat of the program in other locations. The first institute would be held in Toronto. Three other locations have expressed interest in hosting the institute. Using a core of Toronto facilitators, local expertise would be identified to supplement the core of presenters. This approach ensures some continuity (and experience) across the institutes while enriching the program with input from local knowledge management leaders.

Toronto - Early Spring 1999
Edmonton - Late Spring 1999
Ottawa - Early Fall 1999
Winnipeg - Late Fall 1999
Appendix A-16  
Analysis of Canadian LIS Programs

Canadian LIS Schools

<table>
<thead>
<tr>
<th>Name</th>
<th>Web Address</th>
<th>Faculty Affiliation</th>
<th>Degrees Granted Programmes Offered</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dalhousie University</td>
<td><a href="http://www.mgmt.dal.ca/slis">www.mgmt.dal.ca/slis</a></td>
<td>Faculty of Management with School of Business Admin; Public Admin; Resource and Environmental Studies</td>
<td>MLIS - 2 year and part time programmes (16 courses) includes Work Experience Programme MLIS/LLB - 4 years - complete both degrees Ph.D. - no programme, possibility of working on an Interdisciplinary PhD shared with another dept.</td>
<td>Mission statement includes “…graduate education …which equips them for their first and subsequent positions as information professionals.”</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Name Web Address</th>
<th>Faculty Affiliation</th>
<th>Degrees Granted Programmes Offered</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>McGill University Graduate School of Library and Information Studies <a href="http://www.gslis.mcgill.ca">www.gslis.mcgill.ca</a></td>
<td>Faculty of Education</td>
<td>MLIS - 2 year; full, part time study (48 credits); mand. introductory program; Graduate Diploma In Library and Information Studies - full or part time option (30 credits); research paper (max 18 credits); max 15 credits other schools at McGill; max 9 credits other univ. Ph.D. (Ad Hoc) - interdisciplinary research topics; attached to GSLIS ; program planning and research progress with Faculty of Graduate Studies and Research</td>
<td>MLIS - &quot;...knowledge and skills necessary to identify, acquire, organize, retrieve, and disseminate information....&quot; Grad. Diploma - &quot;...provides professional librarians and information specialists with formal, for credit continuing education opportunities to update, specialize, and redirect their careers for advanced responsibility. For those considering admission into the Ph.D. program, it will provide an opportunity to develop further their research interests.&quot;</td>
</tr>
<tr>
<td>University of Alberta School of Library and Information Studies <a href="http://www.slis.ualberta.ca">www.slis.ualberta.ca</a></td>
<td>Faculty of Education</td>
<td>MLIS - 2 year; thesis or course-based route</td>
<td>MLIS - &quot;...first professional degree... to develop the knowledge, understanding, attitudes and skills that will prepare graduates for positions of responsibility in school, academic, public and special libraries, and in the information industry. &quot;</td>
</tr>
<tr>
<td>Name</td>
<td>Web Address</td>
<td>Faculty Affiliation</td>
<td>Degrees Granted Programmes Offered</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>----------------------</td>
<td>----------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>University of Western Ontario</td>
<td><a href="http://www.fims.uwo.ca/lis">www.fims.uwo.ca/lis</a></td>
<td>Faculty of Information and Media Studies Programs: LIS; Journalism; undergrad in Media; Information and Technoculture</td>
<td>MLIS - 12 month program; per term option - equivalent to 2 year program.</td>
</tr>
<tr>
<td>University of Montreal</td>
<td><a href="http://www.fas.umontreal.ca/EBSI">www.fas.umontreal.ca/EBSI</a></td>
<td>Faculty of Arts and Sciences</td>
<td>MLS (MBSI) - 2 year with last applications in 1998-99</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MIS (MSI) - 2 year beginning in 1998</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Certificate in Archives - 1 year</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Ph.D. -</td>
</tr>
<tr>
<td>Name Web Address</td>
<td>Faculty Affiliation</td>
<td>Degrees Granted Programmes Offered</td>
<td>Other</td>
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<tr>
<td>University of British Columbia</td>
<td>Faculty of Arts and Sciences</td>
<td>MLIS - 2 years; 48 credits; non-credit practicum and thesis or graduating essay required. 18 credits core; 30 elective + essay or 18 elective + 12 thesis; all core courses must be taken prior to any electives.</td>
<td>“Preparing professionals to exercise leadership in planning, implementing and promoting the preservation organization and effective use of society’s recorded information and ideas.”</td>
</tr>
<tr>
<td>School of Library, Archival and Information Studies <a href="http://www.slais.ubc.ca">www.slais.ubc.ca</a></td>
<td></td>
<td>MAS (Masters of Archival Studies) - 2 years; 48 credits. 24 credits core; 24 elective + essay or 12 credits electives + 12 thesis. Certificate of Advanced Study - 24 credits focused in 1 or 2 areas of interest to be completed up to 5 years. Must have an MLS or MAS (related fields considered). 24 credits or 12 + 12 thesis.</td>
<td>CAS - “...program for professional librarians and archivists... to engage in focused further study in their field...”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>First Nations Curriculum Concentration - MAS or MLIS degree program - SLAIS courses plus courses from other faculties</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Professional Experience Program - work-study program;</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Faculty Affiliation</td>
<td>Degrees Granted Programmes Offered</td>
<td>Other</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| University of Toronto | Faculty of Information Studies | MIS - 2 year; full or part time study; research stream  
Collaborate Program in Alcohol, Tobacco and Other Psychoactive Substances -  
Health Sciences Certification - MLA certificate; 3 years to complete;  
Ph.D. - Phase I - course work in major subject area, participation in Colloquium series, language requirement, qualifying exam. Phase II - thesis. Approval by FIS Doctoral Studies Committee and SGS.  
Continuing Education Program - single and multiple day workshops; certificate program in internet business technology; customized programs for organizations  
McLuhan Program in Culture and Technology | MIS - 3 streams - archival studies, information systems, library and information science |
Appendix A-17
PDAC Report Definitions

Definitions

Establishing a series of definitions was central to ensuring that when the Committee was discussing a particular point or concept there was an understanding of the meaning or meanings behind the term. This list was compiled not as definitive definitions, but as a common ground of vocabulary used throughout the report. The list of terms also reflects the key words used both in Committee discussions and in stating the recommendations. Some definitions were taken directly from the literature; others were formulated from a combination of sources including discussion of the PDAC members. The source of the definition is indicated in parenthesis behind the definition.

**Advanced Professional Training** - after completion of an introductory program, training which a) provides a more in-depth training in a particular subject area or areas within or related to the field; b) updates or reskils the professional in new trends and techniques within or impacting the profession; or c) expands the competencies of professionals from related fields. (PDAC)

**Collaborative Program** - offered by two or more graduate units using the teaching and facilities of the collaborating units. The student must be admitted to, and enrol in, one of the collaborating units, but may design his/her program from courses and research offered in the collaborating units. (SGS calendar)

**Competencies** - the knowledge base (subject matter and content areas), the skills (techniques and abilities), and attitudes (the personal approach and motivation) used in combination to preform a task.
(Stark & Lowther)

**Curriculum** - an explicitly and implicitly intentional set of interactions designed to facilitate learning and development to impose meaning on experience. (Miller and Seller)

**Data** - raw information content, unprocessed by human beings. (FID)

**Information** - data that has informed a human being. (FID)

**Information Practices** - the behaviours and procedures which govern the use of information by individuals or organizations. (PDAC)

**Information Professional** - professionals trained in the management and use of information, particularly to: acquire, organize, store, filter, classify, retrieve, represent, and disseminate information with an emphasis on working with people in order to help them understand and manage their information requirements. (The Faculty brochure)

NB - need to expand with design, create, analyze, synthesize and evaluate?
**Information Professionals** - a collective group of related professionals with a specific skill orientation for managing the information process with an emphasis on providing others with information or making information available to others. (PDAC)

**Information Science** - the discipline which addresses the elements of information generation, storage, access, preservation and use. (ALA Program Presentation)

**Information Studies** - the study of the discipline of information science. (PDAC)

**Information Technology** - the hardware, software, and communication tools which support the management and use of information. (PDAC)

**Introductory Professional Training** - a program which results in a first professional degree such as the The Faculty Masters of Information Studies. (Adapted The Faculty calendar)

**IS/IT Professionals** - specialist in the design, implementation and management of information systems and information technology as infrastructure for the information or knowledge management process. (PDAC)

**Knowing Cycle** - a continuous flow of information which is maintained between sense making, knowledge creation, and decision making so that the outcome of information use in one mode provides the elaborated context and the expanded resources for information use in the other modes.

(Choo)

**Knowledge** - information that has been analyzed, organized and perhaps acted upon. Knowledge is cumulated by individuals, organizations, and societies. (FID)

**Knowledge Management** - the management of organizational knowledge using the practices of information management and organizational learning in order to deliver value to the organization based on two foundations; utilizing and exploiting the organization information, and the application of peoples' competencies, skills, talents, thoughts, ideas, intuitions, commitments, motivations, and imaginations. (Broadbent based on Harari)

**Knowledge Management Process** - a process which includes three components: Knowledge Generation - Increasing the stock of corporate knowledge through: acquisition (purchase or rental); fusion - building of teams; dedicated resources - such as the R&D dept.; adaptation - change; knowledge networking; Knowledge Codification and Coordination - Putting knowledge into a form that makes it accessible. What business goals are served? Identify existing knowledge to meet goals. Evaluate for usefulness and appropriateness. Identify appropriate distribution; and, Knowledge Transfer - People talking and listening to each other is central to transfer. Recognizing that talk is REAL work. Trust and a common ground (i.e., language) are essential. Focus on the human element, not the technical. Transfer = Transmission + Absorption and Use. (Davenport and Prusak)
Management Professionals - specialists trained in the design and management of organizations. (PDAC)

Management Studies - the study of the field of business and organizational management (PDAC)

Organizational Design - how organizations are designed in order to achieve their goals. (PDAC)

Portfolio of Programs - a collection of programs which represent the range of educational opportunities offered by a faculty. (PDAC)

Pre-process; Pre-production - the design and creation phase of the information or knowledge process. (PDAC)

Program - a series of courses and activities which have been designed to meet a general goal. The Faculty examples include: the MIST degree program, the Ph.D. degree program, the continuing education program, The McLuhan Program, and several collaborative programs including: Aging and the Life Course; Alcohol, Tobacco and other Psychoactive Substances; Environmental Studies; and, Women's Studies. (PDAC based on SGS and The Faculty calendars)

Professional - a member of an exclusive occupational group who applies somewhat abstract knowledge and skills acquired in specialized training to particular cases. (Abbot)

Resource Object - an object in any format (book, audio visual, digital, electronic, etc.) which represents information. (PDAC)
Appendix A-18
Information Continuum

Information Continuum - a continuum that shows the stages of information and knowledge activities in three phases:

<table>
<thead>
<tr>
<th>Creation</th>
<th>Management</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan, design, create, produce</td>
<td>Acquire, organize, store, retrieve, disseminate, preserve</td>
<td>Analyze, synthesize, evaluate, package, present</td>
</tr>
<tr>
<td>(Preproduction)</td>
<td>(Production)</td>
<td>(Post Production)</td>
</tr>
</tbody>
</table>
The Faculty PDAC
Reflections on the Process

September 2, 1998

The PDAC Committee’s work has been in many ways an experiment in curriculum development. As part of the report to the Dean, we will include comments on the elements of the design process itself as well as an evaluation of that process through the form of reflections by the Committee members.

Please take a few moments and reflect on the process.

What worked? What didn’t work? What would you change -- suggested modification? What comments/advice do you have for a subsequent curriculum committee?

You might wish to comment on the basic elements:

The membership and structure of the PDAC.
The design model - thinking in the ideal, fitting pieces of the puzzle together.
The research methods and people contacted.
The reporting mechanisms.
The information presentation.
The time frame/work plan.
The use of an external facilitator.

Please either fax (978-5762) or email (xxx@xxx.ca) your response by Sept. 18th.

With thanks!
Appendix A-20
PDAC Process Member Evaluations

Reflections on the curriculum development process were received from three members of the Committee. The following chart summarizes their responses to seven process elements and includes their final summary.

<table>
<thead>
<tr>
<th>Element</th>
<th>PDAC Member Comment</th>
</tr>
</thead>
</table>
| Membership Structure             | -Selecting from such a broad constituency serves to confirm the direction of the group; keeps it onside with the goals, if all participants keep pace and contribute honestly  
-All attendees are truly committed to the goal and enthusiastic about its potential; keen on breaking new ground  
-Interesting group of people; represented groups who are not yet using KM techniques - useful to learn from the exposure!  
-There was rich input from the broad composition of the committee.  
-Excellent infrastructure of support and documentation. |
| Curriculum Design Model          | -Worked well; brunt of work with chair and facilitator  
-On target, on topic, on time! |
| Research Method and Participants | -Combination of research and survey methods helped to reinforce and confirm the direction of the committee  
-Use of external people for interviews was particularly successful  
-Variety of techniques were used effectively.  
-Each person or group consulted had its own perspective; what was “comforting” was that PDAC ideas were not new to these people, hence they were able to get right to the point, visualize selected scenarios and help put the puzzle together  
-Drawing out potential sponsors and funding was a primary achievement |
| Communications                   | -Reporting of so many editions was confusing and hugely consumptive of time, energy and supplies - not sure how it would have been handled differently given the many pieces of the puzzle required to view the whole.  
-Minutes kept us up to date, and reflected progress on issues, included other resources that related to issues discussed.  
-The discussions in the meeting were productive and constructive, in a very congenial atmosphere.  
-Listserv useful for information distribution, but not for discussion |
<table>
<thead>
<tr>
<th><strong>Element</strong></th>
<th><strong>PDAC Member Comment</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Information</strong></td>
<td>-Writing has been largely clear and concise.</td>
</tr>
<tr>
<td><strong>Presentation</strong></td>
<td>-The group’s word smithing, was just that.</td>
</tr>
<tr>
<td></td>
<td>-Changing a few priorities was probably good, but the meat of the report remains the creation of the chair and consultant</td>
</tr>
<tr>
<td><strong>Time Frame</strong></td>
<td>-Time frame was gentle for participants! Probably not so for the leaders</td>
</tr>
<tr>
<td><strong>Work Plan</strong></td>
<td></td>
</tr>
</tbody>
</table>
| **Use of External Facilitator** | -Using an external facilitator undoubtedly lent validity to the whole process.  
- The process worked very smoothly, partly due to the use of an external facilitator; without such help, it would be a very heavy burden to come up with these results. The facilitator has been instrumental in putting everything together. |
| **Other or Summary Comments** | -In sum, on reflection on PDAC’s work, my reading and my gut feel and experience, this proposed program trial (and beyond) clearly will fill a need, appeals to a wide sector, would be a boost to The Faculty, and is indeed timely. I hope others - in The Faculty and beyond - will be persuaded and come on board to endorse, assist and commit to the next phase.  
-I enjoyed the process and I am glad I was able to contribute to this important initiative. |
Appendix B-1
Curriculum Development Model

Processes for Educational Program Development
Diamond (1989)
Appendix B-2
List of Data Collection Items

Case Study Data Collection

The following items were used for data analysis. Where drafts of particular items are noted, the drafts are grouped together under one title. If the title of the item changed during the drafts, the new title is included within the grouping.

Part I. Participant Researcher

PDAC Meeting No. 1 - 4 - Notes
PDAC Meeting No. 1 and 3 - Tape notes
PDAC Meeting No. 2 and 4 - Tape transcriptions
Participant Researcher - Field notes and journal
Participant Researcher - Notes from meetings with PDAC Chair and the Dean

Part II. Document Analysis

1. PDAC Research - Data Gathering Tools and Data Analysis Summaries
   Key Informant - Focus Group Discussion
   Key Informant - Email Survey
   Key Informant - Dean’s Advisory Board Meeting Discussion
   PDAC Discussion - Meeting No. 3 - Program Components
   Faculty Alumni Survey
   Key Informant - Interview

2. PDAC Working Documents

   Student/Participant Profile
   Draft #1 - Feb. 27, 1998

   Component Considerations
   Draft #1 - May 1, 1998
   Draft #2 - May 7, 1998
   Draft #3 - May 13, 1998
   Draft #4 - May 21, 1998
   Draft #5 - July 20, 1998
   Program Design Component Considerations
   Draft #6 - August 1, 1998
   Draft #7 - August 5, 1998

   Fundamental Direction
Draft #1 - May 13, 1998
Fundamental Program Direction
Draft #3 - July 20, 1998
Fundamental Direction
Draft #4 - August 4, 1998
Program Direction and Differences
Draft #5 - August 6, 1998
The Faculty Portfolio of Programs: Directions and Differences Between the MIST Degree Program and the New Curriculum
Draft #6 - August 6, 1998
Draft #7 - August 23, 1998

The Faculty Program Portfolio
Draft #1 - August 7, 1998
Draft #2 - September 23, 1998

Institute Planning Ideas
(Committee outline) - June 26, 1998
(Committee outline) - July 14, 1998
(Committee outline) - July 20, 1998
(Presentation document) - August 9, 1998

Recommendations
General Recommendation - General Direction
Draft #1 - August 4, 1998
Summary of Recommendations
Draft #1 - August 23, 1998
Draft #2 - August 24, 1998
Draft #3 - Sept. 3, 1998
Draft #4 - Sept. 5, 1998

Final Report - PDAC Report of Recommendations
Oct. 1, 1998

3. PDAC Position Papers

Definitions
The Faculty Change Time Line
Principles of Knowledge Management
Program Structure Models

Part III. PDAC Member Survey

Meeting No. 4 Discussion
Survey/Reflection Response
## Appendix B-3
Data Analysis - Coding Scheme

<table>
<thead>
<tr>
<th>Element</th>
<th>Category</th>
<th>Characteristic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process - Design Model</td>
<td>The Problem</td>
<td>Elements of what constitutes the curriculum problem</td>
</tr>
<tr>
<td>Research - WHO</td>
<td></td>
<td>Participants of research studies - key informants; alumni; various stakeholders</td>
</tr>
<tr>
<td>Research - WHAT</td>
<td></td>
<td>Questions to be researched in order to make decisions on design</td>
</tr>
<tr>
<td>Working Documents/Concept Papers</td>
<td></td>
<td>Items created for PDAC use to define characteristics or concepts</td>
</tr>
<tr>
<td>Curriculum Components</td>
<td></td>
<td>Elements of the curriculum which need to be identified; direction for recommendations</td>
</tr>
<tr>
<td>Business Case</td>
<td></td>
<td>Elements which support the feasibility of developing and implementing the design</td>
</tr>
<tr>
<td>Solution (presentation)</td>
<td></td>
<td>Interpreting/explaining the curriculum design to various stakeholders</td>
</tr>
<tr>
<td>Creating Meaning</td>
<td></td>
<td>Tools used to make the PDAC's recommendations meaningful/understandable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Definitions; analogies; assumptions; interpretations; clarifications</td>
</tr>
<tr>
<td>Influencing Factors</td>
<td></td>
<td>Factors which influenced elements of recommended design solution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Societal trends, changes in information use; technology;</td>
</tr>
<tr>
<td>Professional Education</td>
<td></td>
<td>Aims of professional education</td>
</tr>
<tr>
<td>Responsibilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Influencing Factors</td>
<td>Profession/Professional Practice</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Information Disciplines</td>
<td></td>
</tr>
<tr>
<td>Element</td>
<td>Category</td>
<td>Characteristic</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Influencing Factors</td>
<td>Professional Preparation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Governance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trends in Information -</td>
<td></td>
</tr>
<tr>
<td></td>
<td>creation, management, use</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Misc. Challenges</td>
<td></td>
</tr>
<tr>
<td>Lessons Learned</td>
<td>Process/Method</td>
<td>Comments on how the process worked; what could have been done differently</td>
</tr>
<tr>
<td></td>
<td>Philosophy</td>
<td>What concepts/approaches were considered due to process application</td>
</tr>
<tr>
<td></td>
<td>Practicalities</td>
<td>Comments on application; what influenced “doing”</td>
</tr>
</tbody>
</table>
Appendix B-4
List of Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALA</td>
<td>The American Library Association</td>
</tr>
<tr>
<td>ALISE</td>
<td>The Association for Library and Information Science Education</td>
</tr>
<tr>
<td>CE</td>
<td>Continuing education</td>
</tr>
<tr>
<td>FID</td>
<td>International Federation for Information and Documentation</td>
</tr>
<tr>
<td>IS/IT</td>
<td>Information systems/information technology</td>
</tr>
<tr>
<td>JELIS</td>
<td>Journal of Education for Library and Information Science</td>
</tr>
<tr>
<td>KM</td>
<td>Knowledge management</td>
</tr>
<tr>
<td>LIS</td>
<td>Library and Information Science</td>
</tr>
<tr>
<td>MIS</td>
<td>Master of Information Science Degree</td>
</tr>
<tr>
<td>MISt</td>
<td>Master of Information Studies Degree</td>
</tr>
<tr>
<td>MLS</td>
<td>Master of Library Science Degree</td>
</tr>
<tr>
<td>PDAC</td>
<td>Program Directions Advisory Committee</td>
</tr>
<tr>
<td>WSOM</td>
<td>Weatherhead School of Management - Case Western Reserve</td>
</tr>
</tbody>
</table>