MBA knowledge management course: is there an impact after graduation?

Nick Bontis*

DeGroote School of Business
McMaster University
1280 Main Street West, MGD #207
Hamilton, Ontario, L8S 4M4, Canada
E-mail: nbontis@mcmaster.ca
*Corresponding author

Alexander Serenko

Faculty of Business Administration
Lakehead University
955 Oliver Road, Thunder Bay
Ontario, P7B 5E1, Canada
E-mail: aserenko@lakeheadu.ca

Ernest Biktimirov

Faculty of Business
Brock University
500 Glenridge Ave., St. Catharines
Ontario, L2S 3A1, Canada
E-mail: ebiktimirov@brocku.ca

Abstract: The purpose of this paper is twofold. The first is to present the structure of a course entitled 'Strategic Knowledge Management' taught at the MBA level at the DeGroote School of Business, McMaster University, Canada. The second goal is to report on the survey of 43 course alumni and offer insights for other instructors interested in the development of the KM-related curriculum. The survey results are encouraging since there seems to be very little if any deterioration in the learning value of this course over time. In explaining the positive results of this study, four main reasons why the learning impact of this course sustains itself for years after graduation are suggested: 1) cross-disciplinary perspective, 2) variety of pedagogical techniques, 3) practical industry exposure and 4) exposure to best practices. Overall, this paper may be of interest to academics who are involved in the development of graduate level courses in Knowledge Management (KM).

Keywords: Knowledge Management (KM); course; curriculum; education; alumni survey.

Biographical notes: Nick Bontis is an Associate Professor of Strategic Management at McMaster University, Canada. He completed his PhD from the Ivey Business School, University of Western Ontario. He teaches university courses in knowledge management, business policy and strategy as well as structural equation modelling. He is also a globally recognised keynote speaker and consultant. Dr. Bontis has received numerous teaching and research awards and is recognised as one of the most cited authors in the fields of knowledge management and intellectual capital. He is also Associate Editor of the *Journal of Intellectual Capital* and Chief Knowledge Officer of Knexa Solutions.

Alexander Serenko is an Assistant Professor of Management Information Systems in the Faculty of Business Administration, Lakehead University, Canada. He holds a MSc in Computer Science, an MBA in Electronic Business, and a PhD in Management Science/Systems. Dr. Serenko's research interests pertain to user technology adoption, knowledge management, and innovation. His articles have appeared in various refereed journals, and his papers have received awards at various Canadian and international conferences.

Ernest Biktimirov is an Associate Professor of Finance at Brock University, Canada. He received his PhD in Finance and MBA from the University of Kentucky, and his MSc from the Tashkent Electrotechnical Institute of Telecommunication, Uzbekistan. He teaches both undergraduate and graduate finance courses, and conducts research in the areas of investments and financial education. He has been the recipient of the University and Faculty of Business Distinguished Teaching Awards. He is also the holder of the Brock Chancellor's Chair for Teaching Excellence. He serves as a member of the editorial advisory board of the *International College Teaching Methods and Styles Journal*.

1 Introduction

During the past decade, the topic of Knowledge Management (KM) has generated considerable interest in both private and public sectors. For the past several years, the number of academic and practitioner-oriented articles in this area has been dramatically growing, and it is predicted to exceed 100 000 individual publications by the year 2010 (Serenko and Bontis, 2004). The ability to manage knowledge assets effectively has become one of the major competitive advantages of firms (Edvinsson, 2002). However, despite a vast adoption of KM principles by various types of organisations related to building intellectual capital (Stewart, 2001), reducing turnover (Stovel and Bontis, 2002), implementing groupware technology (Chauhan and Bontis, 2004), accelerating collaboration (McKnight and Bontis, 2002), and improving e-mail management (Bontis *et al.*, 2003), the university community has been relatively slow in developing courses to prepare students for future careers in this field (Ruth *et al.*, 1999). For example, only a handful of Canadian and US universities currently offer graduate courses in KM (McMaster, Queen's, George Washington, George Mason).

Instructors who need to develop KM curriculum for their business or engineering programmes face several teaching challenges. First, although a growing body of literature, such as books, articles and cases, addresses the area of KM, there is a lack of educational resources. For instance, compared with other disciplines, in KM, there are

fewer comprehensive textbooks, established readings lists, sample assignments, cases, test banks, *etc*. Secondly, the KM field is dynamic, relatively young and changing, which makes it difficult for instructors to keep course content current. Thirdly, due to the management aspect of this applied course, it is taught, as a rule, at the graduate level, which requires instructors to involve a higher level of learning of their students. In addition to traditional lectures, KM courses usually employ cases, simulations, and projects. Lastly, due to its cross-disciplinary nature, KM courses can focus on different areas, and appropriate approaches for teaching each of these areas are typically varied. Therefore, it is believed that instructors interested in the delivery of KM courses may need help in terms of sample curricula. However, despite all the challenges associated with developing and teaching a KM course, only two papers that address KM and education were found in the extant literature (Ruth *et al*., 1999; Ruth *et al*., 2003).

Ruth *et al*. (1999) provide a 'toolkit' to help instructors in different disciplines in developing and teaching university level KM courses. Based on their own experience and insights from their colleagues, the authors suggest various course resources and teaching approaches. Specifically, they present lists and brief discussions of books, cases and online resources that may be adapted by instructors. They also describe eight content modules that may be included in a typical graduate KM course. The authors outline four approaches that may be used to deliver the course, which include:

1   current industry practice

2   KM history, underlying concepts and theory

3   human factors and personnel issues

4   hardware and software.

While Ruth *et al*. (1999) describe content and approach for an individual KM course, Ruth *et al*. (2003) present five different foci for a KM degree, such as:

1   management

2   organisational learning

3   information technology

4   library/information sciences

5   innovative approaches to knowledge diffusion.

They also offer examples of these programmes at different institutions. As useful references, Ruth *et al*. (2003) provide websites and key concentrations for a sample of graduate KM courses in the USA and abroad, focusing on business and economics schools, the two areas where KM teaching predominates.

Given a large number of approaches, content modules, and perspectives that can be used in planning and delivering KM courses, more research is needed in the KM instruction area. The contribution of this paper is twofold. The first is to briefly present the P727 'Strategic Knowledge Management' course that has been taught at the DeGroote School of Business, McMaster University since 2001. As such, the presentation and evaluation of course content and instructors' experiences coupled with students' feedback have a long-standing tradition in academia. Currently, most academic areas boast a strong body of knowledge that may be of interest to instructors when

developing new courses. For example, the ERIC database[1] offers hundreds of papers and reports on this topic. However, the presentation of sample course content alone is not sufficient to ensure successful curriculum adoption. Indeed, it is important to identify and measure the impact of this course on the alumni's working lives. Therefore, the second goal of this paper is to report, analyse and discuss the results of a survey of 43 alumni who completed this course *a priori* to their current working position.

2 P727 course overview

The word *syllabus* originates as a misprint of the Greek word *sittuba*, meaning a label and table of contents. The usage of this word in terms of the contents of a course instruction dates to the late 18th century (Ayto, 1990). A syllabus has become an indispensable part of every course. Generally, instructors distribute the syllabus on the first class meeting, and students use it throughout the entire course. A syllabus serves, at least, three important functions in a pedagogical process. First, it represents a contract between the instructor and students (Matejka and Kurke, 1994; Parkes and Harris, 2002). Like any contract, some syllabi can be negotiated, while others cannot. Usually, instructors make all terms of a syllabus fixed in introductory courses, while students may contribute to some parts of the syllabus in advanced courses. Second, a syllabus serves as a permanent course record (Parkes and Harris, 2002). In this function, it demonstrates the instructor's teaching, which can be used in promotion decisions, and shows the alignment of the course with programme requirements (Cunningham and Omolayole, 1998) and institutional mission (Strada, 2000). Third, a syllabus is an effective learning tool that can guide students both inside and outside of the classroom (Hockensmith, 1988). A syllabus, among other things, helps students assess their course readiness, presents available learning resources, and teaches students how to study for the course. The rest of this subsection briefly presents the P727 syllabus.

Since fall 2001, the DeGroote School of Business, McMaster University has offered a full-credit second year MBA elective course P727 'Strategic Knowledge Management', which was the first knowledge management MBA course in Canada. To obtain a minor in KM, students are required to complete P727 and two of the following three courses:

1   P737 'Profiting from Intellectual Capital'

2   K726 'Enterprise Portals and Knowledge Management'

3   A718 'Issues in Accounting for Innovation and New Technology'.

The course is offered within the Strategic Market Leadership area of the business school, which houses courses primarily in the areas of business policy and strategy, as well as marketing and international business. The course has no required prerequisites and as such can be taken by a first year MBA student on an overload basis or as a substitute for a first year core MBA course for which the student has received an exemption. This course is also available to exchange students.

The P727 course provides students with the knowledge and skills necessary to strategically manage individual, group and organisational-level knowledge assets (Bontis, 1999; Bontis *et al.*, 2002). The objective of the course is to enhance students' ability to perform the duties of a knowledge manager and/or successfully design and implement

a corporate knowledge management initiative. The course content is drawn from multi-discipline literature including human resources, accounting, finance, strategy, marketing and information systems. To address different learning styles of students, this course uses a variety of pedagogical techniques including case studies, readings, lectures, assignments, presentations by company representatives, educational videos, and a simulation game. Case studies provide students with an opportunity to develop and apply their understanding of the KM to real-world situations encountered in a variety of business decision settings. The following management case studies are taught: Skandia AFS; Buckman Laboratories; World Bank and KM; Integral Consulting; KPMG Peat Marwick US: One Great Brain. Selected readings are also assigned from a variety of literatures including intellectual capital, information management, portals, human capital, causal modelling, communities of practice, organisational learning, competitive intelligence, customer relationship management, citizen relationship management and improvisation.

In addition to in-class discussion of cases and readings, students perform various in- and out-of-class activities, such as assignments, presentations, and a simulation game, both in groups and individually. Two course assignments are done in teams of three – five students. In the first assignment, Human Capital Metrics, students have to provide a statistical analysis and overview of events for a given industry based on the human capital metrics of that industry over several years. For the second assignment, KM Technology Summary, students need to prepare a report on a selected company and its product, including a critical analysis of how this system contributes towards knowledge management as compared to other tools and technologies. Each team also prepares a presentation detailing the KM technology it has chosen from the second assignment. Students must present the technology as if they are the KM department of an organisation and are making a recommendation to the Board of Directors. Each member of the group presents and receives an individual grade, which is not shared by the group.

To give students a better understanding of how theoretical issues are addressed in the real-world, several videos are shown in this course. They include: Tom Stewart (Harvard Business Review), Björn Wolrath (Skandia), Leif Edvinsson (UNIC), Bob Buckman (Buckman Laboratories), Keith Bradley (Open University), Stephen Denning (formerly World Bank), Larry Prusak (formerly IBM Institute for KM), Hubert Saint-Onge (formerly Clarica) and Thomas Davenport (formerly Accenture). Also, representatives from local companies demonstrate their KM systems to students.

The TangoNet business simulation game (Sveiby and Mellander, 1994), allows students to apply course content directly on the valuation and management of intangible company assets (Bontis and Girardi, 2000). In this game, several knowledge intensive firms compete for the same clients and people (*i.e.*, experts or knowledge workers) to service those clients in a competitive virtual marketplace. The principal challenge in this simulation is to develop and manage both the intangible and the tangible assets of the company as well as to secure them in the long run. The intangible value of each firm can be boosted by balancing an investment strategy among a variety of choices, such as acquiring the correct staff mix, ensuring that the workers chemistry is aligned, completing all projects successfully, doing research and investing in training and development. Students are allowed to play any number of practice rounds, and are tested on the game. During the test, each student is allowed to play two games, and at the end of each game Tango generates a score, which reflects the cumulative value of the firm. Students pick the higher score (out of two games) that is converted to their grade.

The course concludes with the final case exam, at which students need to show all their knowledge of KM issues. At this exam, students are given five hours for reading, analysing and writing a solution to a case. Overall, this course provides students with many opportunities to learn and to show their knowledge. It has been very well-received by MBA students and has become one of the most popular courses in the programme. More detail about the course is available online at http://www.bontis.com/p727.htm.

3   Alumni survey methodology

In order to measure course impact, a survey of 43 alumni of the P727 'Strategic Knowledge Management' course was conducted. Alumni surveys have a long-standing tradition in academia because they offer a relatively reliable and valid picture of the major strengths and weaknesses of an entire programme or a particular course, report on student satisfaction with the specific curriculum aspects, measure school performance, and provide insights on future improvements (Hoey and Gardner, 1999; Umbach and Porter, 2002; Ogletree, 1998; Simpson and Carroll, 1999; Fogarty and Mayo, 1999). Alumni surveys are conducted at national, university, department and course levels depending on the needs of a particular research initiative. For example, at the national level, Statistics Canada conducts a yearly survey of PhD degree recipients (Gluszynski and Peters, 2005), and the National Association of Colleges and Employers administers various alumni surveys in the USA.[2] Many educational institutions, professional schools or independent course instructors have also conducted similar surveys (*e.g.*, see Haga and Heitkamp, 2000; Caison, 2002).

A review of project methodologies reporting on alumni surveys revealed that there is no single research instrument that can meet the requirements of all studies. In most cases, an individual questionnaire was developed based on the unique characteristics of the curriculum. In terms of the present survey, a draft questionnaire was developed by the authors who were involved in the design and delivery of the P727 course. To assess face validity of the instrument and to make sure that all critical issues were covered, a group of academics from McMaster University who were directly or indirectly engaged in KM-related curriculum was consulted, and various changes to the questionnaire were made. The questionnaire is presented in Appendix 1.

The items pertained to four areas. First, alumni background information was solicited such as the year they took the course, their status at McMaster, graduation year, full- and part-time work experience after graduation, and whether their current employment position was KM-related. Second, course effectiveness and satisfaction were investigated. The questions related to course material retention, course usefulness, particular course components, appreciation of KM, and motivation for taking P727. Third, course links to job and career were studied. The questions pertained to the importance of KM knowledge in the workplace, its actual application, benefits, changes in the view of contemporary organisations, and overall course career and job search impacts. Fourth, workplace specifics were analysed. The alumni were asked about additional KM or Intellectual Capital (IC) training, the potential importance of such training in their workplace, actual

KM initiatives they have encountered, challenges to KM initiatives, and KM manager characteristics. No gender and age information was solicited for ethical reasons.[3] Overall, it was believed that the use of this instrument helped to achieve the purpose of the study.

The questionnaire was presented online by using WebSurveyor. Ninety-three individuals who completed P727 were identified and approached by an e-mail message explaining the purpose of the study and asking them to complete the questionnaire. In order to obtain higher response rate, two weekly reminders were sent as recommended by Dillman (1999).

4   Results

Out of 93 initial e-mail invitations, 26 messages bounced back. Twenty-four, twelve, and seven completed surveys were received after the first, second, and third e-mail message. Overall, 43 valid responses were obtained for a response rate of 64% that is considered relatively high in management studies (Frohlich, 2002; Jobber *et al.*, 2004). Based on the population data received from the MBA admissions office, the average age of MBA students was 27 years old; 39% of them were female; and their pre-MBA average work experience was three years.

4.1   General questions

In terms of their status, 30 students were full-time, 11 part-time, and two were on foreign exchange. Figures 1 and 2 outline when the respondents took P727 and when they graduated from the programme. In terms of their work experience, nine and 37 alumni did not have full- and part-time post programme work experience, respectively. Overall, only three individuals had neither full- nor part-time experience (see Figures 3 and 4 for detail). Thirty-two alumni characterised their current position as 'knowledge-based', six did not, three were not sure about the knowledge-based aspects of their jobs, and four were not presently employed.
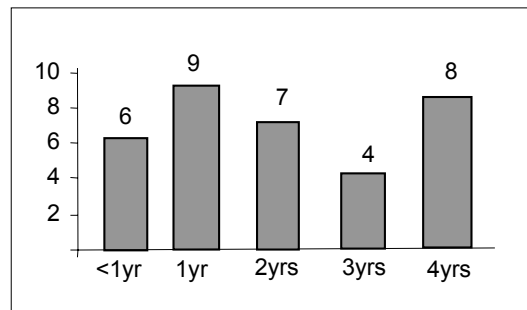
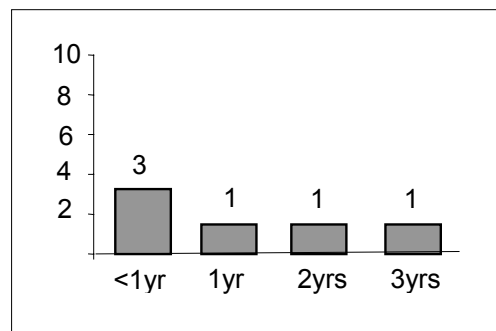**Figure 1**   Year course was taken
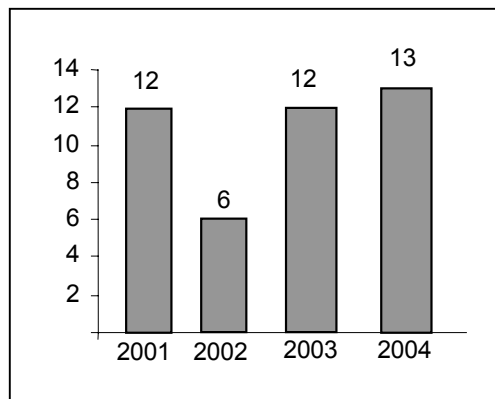
Figure 2 Year graduated
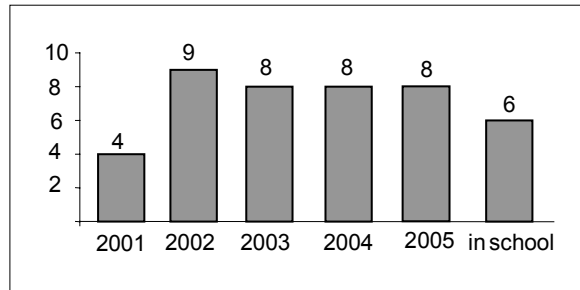
Figure 3 Full-time work experience

Figure 4 Part-time work experience

4.2 *Course effectiveness and satisfaction*

Table 1 outlines item statistics on the key learning principle retention, overall course usefulness, and changes in KM appreciation. Overall, the average scores were 6 out of 7 (*i.e.*, around 'agree'), and it was concluded that positive feedback was received. Note that some respondents left particular items blank, and some respondents offered two or more answers to a single open-ended question. Therefore, totals may deviate from the total number of respondents.

Table 1   Learning principle retention, course usefulness, and KM appreciation change

Question	Range	Mean / 7	Std. Dv.
I still retain some of the key learning principles I acquired from the P727 course.	3–7	5.95	0.95
P727 was a useful elective course relative to other elective courses that I took during my MBA.	3–7	6.09	1.04
My appreciation for strategic knowledge management has increased since I took the course.	4–7	5.95	1.05

Table 2 presents the alumni's ranking of several course components, such as lectures, case studies, assignments, technology presentations and TangoNet simulation game, and Table 3 offers correlations statistics. An ANOVA test was done on Table 2 scores $(F_{(5, 252)} = 7.88,\ p < 0.001)$ that showed significant differences among most of the means. In terms of the course component evaluation, the instructor's lectures received the highest ranking, followed by case studies, assignments, and KM technology presentations. The TangoNet KM simulation grade obtained a lower score of 3.84 out of 6. With respect to component relationships, the highest correlation was between case studies and KM technology presentations (0.7), some other items exhibited moderate correlations, and TangoNet moderately correlated with only one course component.

Table 2   Course component evaluation

Question: How useful were the following teaching methods used in the P727 course in terms of applying KM concepts in your professional career?	Range	Mean / 6	Std. Dv.
Lectures	3–6	5.23	0.81
Case studies	2–6	4.77	1.09
Assignment 1 (Human Capital Matrix)	2–6	4.28	1.26
Assignment 2 (KM Technology Summary)	2–6	4.28	0.98
KM technology presentations by companies	2–6	4.23	1.17
TangoNet simulation game	2–6	3.84	1.43

Table 3   Correlation matrix of course component evaluation

	Lectures	Cases	Assign 1	Assign 2	KM Tech
Lectures	1.00				
Cases	0.31*	1.00			
Assign 1	0.52*	0.52*	1.00		
Assign 2	0.33*	0.29	0.55*	1.00	
KM Tech	0.34*	0.70*	0.36*	0.38*	1.00
TangoNet	0.12	0.13	0.32*	–0.17	0.25

Note: * – significant at 0.05 level

A MANOVA test was done on the course component item evaluation where a job characteristic variable (knowledge-based vs. non-knowledge-based) was employed as a fixed factor (Wilk's Lambda = 0.4, $p < 0.05$). A Tukey's honestly significant difference test was performed. Those whose job was knowledge-based, ranked higher the usefulness of case studies (mean difference = 1.24, $F = 2.92$, $p < 0.05$), and the usefulness of KM technology presentations by company representatives (mean difference = 1.14, $F = 3.00$, $p < 0.05$).

The questionnaire also presented a number of open-ended questions. All responses were analysed by two independent coders to ensure reliability. *A priori* codebook was developed based on the existing literature that is a valid approach in qualitative research (Bodkin and Perry, 2004; Miles and Huberman, 1994; Jones, 1999; Detlor *et al.*, 2003). The positivist paradigm was accepted, and classical content analysis (Budd *et al.*, 1967; Riffe *et al.*, 1998; Ryan and Bernard, 2000) was performed that is a "method of studying and analyzing communications in a systematic, objective, and quantitative manner to measure variables" (Kerlinger, 1973, p.525). For all items, an acceptable level of reliability was achieved (*i.e.*, the Krippendorff's (1980) agreement coefficient was above 0.8). When the coders failed to agree on the re-coding of discrepancies, these items were excluded from the analysis. With regards to the primary motivation for taking the course, 41 valid responses were obtained. Out of them, 26 alumni indicated that general subject interest inspired them to take this course. They perceived KM as a novel, unique, and unexplored field of study, for example:

> "I wanted to get exposure to KM, its principles and practices."

> "The unknown – had no idea what KM was about and how it was useful in organizations."

> "The course sounded interesting and different."

Seven individuals mentioned the instructor's reputation, for instance:

> "I heard good things about the instructor."

> "The prof who was passionate about the topic."

Four people responded that they took P727 because of the programme requirements or schedule, for example, it was the only course they were able to take that term, and four alumni said they registered for the course for career-related reasons, such as exploring possibilities for a career in KM:

> "I was working in a related field and realized that gaining a better understanding of KM would be beneficial to my job."

4.3 Course links to job or career

Item statistics and inter-item correlations on the questions related to course links to the alumni's careers are presented in Tables 4 and 5, respectively. An ANOVA test was done on Table 4 scores ($F (4, 205) = 3.77$, $p < 0.01$) that demonstrated significant differences among several means. As such, each of two higher means was different from each of two lower means. A MANOVA test was done on these items where job characteristic (knowledge-based vs. non-knowledge-based) was employed as a fixed factor (Wilk's Lambda = 0.075, n.s.), and no differences were observed.

Table 4   Course links to job or career

Question	Range	Mean / 6	Std. Dv.
I feel my understanding of KM principles acquired from the P727 course differentiates me from my colleagues (UNDERSTAND).	2–7	5.57	1.29
I try to provide a KM perspective when I discuss organisational issues with my current colleagues (PERSPECTIVE).	2–7	5.52	1.23
I continue to realise benefits from this course in my workplace environment (BENEFITS).	1–7	5.17	1.25
Taking P727 changed my understanding of the nature of contemporary organisations (NATURE).	3–7	5.40	1.03
During my job search(es) I felt (feel) that the knowledge I acquired from P727 provided me with a competitive advantage (ADVANTAGE).	1–7	4.66	1.35

Table 5   Correlation matrix of course links to job or career

	UNDERSTAND	PERSPECTIVE	BENEFITS	NATURE
UNDERSTAND	1.00			
PERSPECTIVE	0.48*	1.00		
BENEFITS	0.65*	0.55*	1.00	
NATURE	0.22	0.12	0.31*	1.00
ADVANTAGE	0.59*	0.56*	0.53*	0.18

Note: * – significant at 0.05 level

Those, who believed that taking P727 changed their understanding of the nature of contemporary organisations, provided 27 open-ended responses. Three categories emerged. The first one (14 responses) related to changes in the view of organisational performance outcomes, for example, the measurement of overall organisational effectiveness, models, and concepts. The second category (seven responses) referred to changes in the perception of human resource issues, such as recruitment, retention, and succession planning. The third group corresponded to technological issues, for instance, the value of information systems, document management tools, and collaboration applications. After the course, the respondents viewed information technology as a key enabler of KM.

Five alumni reported that the course had a major impact on their careers, 19 mentioned some impact, 12 minor impact, and six no impact. To some extent, taking P727 also affected the alumni's job search strategies after graduation; one of them targeted KM positions only, five targeted more KM than non-KM positions, nine applied to both KM and non-KM jobs, and three prioritised non-KM jobs over pure KM ones. Even though 22 people did not directly target KM opportunities, almost half of all alumni considered a career in KM. Overall, we believed that the course had an impact on the alumni's professional lives and job search strategies. For example, in additional comments to the survey, one graduate indicated:

"I am involved in leading a KM initiative at my organization. Leverage much of what I learned in P727. Found myself 'championing' several of the concepts and strategies seen in lectures/presentations.... resulting in the development of several KM solutions."

4.4 Workspace specifics

The purpose of workspace-specific questions was to understand whether the P727 graduates received any other KM/IC training, the actual or potential usefulness of this training, what KM projects were initiated by their organisations, KM implementation challenges, and the important qualifications of a KM manager. The goal was to comprehend the real-world practices in order to align the curriculum with industry requirements.

Twelve graduates had some formal KM/IC training, including patents, copyrights and trademarks, and 30 did not. Out of those who received this training, eight took other KM/IC related university courses, such as the P737 'Profiting from Intellectual Capital' course at DeGroote, and four had some formal organisational training, for example, EC-Council KM Certification, Sharepoint Document Collaboration, the usage of discussion forums and conducting KM research. Most alumni believed this training was or would be useful to their current job (mean 4.21/6, std 1.24). Those who received additional training perceived KM/IC job training as more useful than those who did not (mean difference = 0.89, $t(39)= 2.14$, $p < 0.05$).

Organisational KM initiatives were analysed along two dimensions:

1 type of KM/IC investments (*i.e.*, Human Capital (HC) vs. Technological Capital (TC))

2 type of KM/IC manipulation (*i.e.*, knowledge stocks vs. knowledge flows).

This type of distinction is typical in the literature (Bontis *et al.*, 2002). Table 6 offers the results. For managing HC stock, organisations conducted exit interviews. To administer HC flow, they facilitated intra- and inter-departmental collaboration and enabled various knowledge transfer processes. To improve TC stock, organisations created knowledge repositories, shared hard drives, information portals, corporate knowledge bases, information management systems, web-based KM solutions, competitive intelligence databases, *etc*. As such, this was the most frequent type of KM/IC investment. To manage TC flow, six organisations implemented community of practice technologies and workflow management systems, such as SharePoint. In addition, five organisations were engaged in extensive KM/IC research, and five did not have any KM initiatives. Below are examples of responses:

- HC-Flow

    "Developed knowledge sharing opportunities for multiple departments within a part of the organisation that engage in similar functions."

- TC-Flow

    "I am working with Microsoft Sharepoint as a document collaboration tool that we use with suppliers."

- TC-Stock

   "We implement information portals and company-shared hard drives to store and locate documents."

- Research

   "I currently collect news articles, analyst reports and other literature related to the financial/real estate industry as a reference point for marketing to our investors. Eventually I am hoping to find a way to set this up as electronic library so that it will be easier to search for pertinent facts."

- No KM

   "We have no KM initiatives. Company is in need for KM as it does nothing to manage the wealth of knowledge stored in the system."

Table 6   Organisational KM initiatives

Type	Human capital	Technological capital
Stock	3	20
Flow	5	6

In terms of challenges organisations face that prevent KM projects from being fully realised, ten categories were identified. The current organisational structure that was mentioned 11 times was a major factor, for example:

   "Very large, very bureaucratic."
   "Fragmentation – geographical, content and industry."
   "Too many program silos in which people are 'too set in their ways' to interact and exchange information."

This was followed by budget constraints (ten responses), for instance:

   "[I] work in healthcare management so it's hard to add more initiatives to an already under-funded system where things are in chaos most of the time."

The lack of time to initiate KM projects (seven responses) and low people's awareness of KM importance (seven responses) were also frequently mentioned:

   Time: "Fast growth and therefore little time to think and plan in an innovative way."
   Time: "People say 'we are moving too quickly to take time to do this' – not sure I agree, but that is the argument."
   Awareness: "Misunderstanding of what KM really means."

Other categories included culture that does not support collaboration and knowledge exchange (five responses), resistance to change (five responses), technological incompetence (five responses), the presence of strong leaders who oppose KM (three responses), overall ignorance of KM (nine responses), and privacy legislation (one response).

With respect to the important qualifications of a KM manager, no single critically important category emerged. Instead, seven almost equally important categories appeared. Twelve responses pertained to the formal or informal KM education, especially, HR, compensation, the measurement of IC, and an understanding of the latest KM trends, for instance:

> "Some formal education directly related to KM."
> "Should be well versed with the HR-related issues."

They were followed by the ability to build trust-based relationships (11 responses), a strong knowledge of the organisation (11 responses), KM vision (11 responses), effective communications abilities (eight responses), financial and accounting expertise including IC measurement (eight responses), and technological competency (seven responses). Overall, it was concluded that there is a variety of equally important qualifications of a KM manager who should become a real professional at most organisational and business aspects.

5 Discussion

The aforementioned results generally indicate a significantly positive perception of this course by alumni even years after graduation. As such, most graduates, especially those whose current jobs are knowledge-based, still retain most of the key course learnings, believe the course was very useful, and exhibit high appreciation to KM. They find class lectures and case studies to be the most useful in terms of their personal careers. Half of them considered KM positions during their job search. They believe the knowledge of KM principles provides them with a competitive advantage in the workplace and the job market. After the course, many of them started looking at organisational performance measures, human resource issues, and information technologies from a KM perspective. Four graduates received additional KM/IC training in the industry. This represents 10% of all alumni that is encouraging given the embryonic stage of the discipline. Most students sighed up for the course because of the novelty of the topic and the instructor's reputation as an award-winning professor in the school. It is suggested that other instructors emphasise the newness of the discipline and possible career opportunities when designing KM course descriptions for academic calendars.

These results are encouraging since there seems to be very little if any deterioration in the learning value of this course over time. In fact, the results of course evaluations that were administered immediately at the end of this course were also quite promising. Students generally rated this course quite high compared to the benchmark set of all MBA electives. A summary of the course evaluations, student testimonials, and other feedback over the same four-year period is offered in Appendix 2.

In explaining the positive results of this study, we argue for four main reasons why the learning impact of this course sustains itself for years after graduation:

1 cross-disciplinary perspective

2 variety of pedagogical techniques

3 practical industry exposure

4 exposure to best practices.

P727 focuses on enhancing students' capacity to do the job of a knowledge manager and/or successfully design and implement a corporate knowledge management initiative. Topics that are covered span a wide variety of management disciplines including human resources, accounting, finance, technology, strategy, and marketing. This cross-discipline approach allows students to frame the concept of KM specifically to their personal experiences. Even after graduation, regardless of what industry or functional job graduates find themselves in, the course curriculum that relates specifically to that discipline will still resonate. Furthermore, this course requires students to bridge the intersection of a variety of incongruent management themes such as library science, information management, the disclosure of intangibles, international literacy, customer data mining and alignment of organisational culture. By providing the links among disparate management perspectives, this course acts as a pooling of advanced management thought which the evidence shows resonates with students in their workplace environment.

Given the challenge of finding useful learning methods to engage today's demanding MBA students, this course attempts to embrace a variety of pedagogical techniques. First and foremost, lectures are supported with real-life case studies from prominent organisations. Often, these case discussions are complemented by video excerpts from the key individual decision-makers themselves. Results of this study show that this approach is received quite favourably by students. Lectures and case studies seem to stay with students for many years. One explanation for this is that students are expected to be present and prepared for every single class. Name cards and class pictures are used to help give credit for participation. The case-method requires students to be cooperative in sharing their views in classroom discussion. In general, each contribution is evaluated by an attending TA who is trained to evaluate such contributions. Debate and challenge are important activities that help in the learning process and the willingness of individuals to engage in such activities with their classmates provides the learning community necessary for fruitful engagement.

When studying a phenomenon so ephemeral as KM, it is wise to couch the concept within a practical context. Students are given a host of industry exposure through several industry speakers who are invited to present in class. This is also supplemented with a technology assignment that requires students to learn and evaluate a real KM tool that has been implemented in the real world. Another common methodology in providing the practical academic curriculum is to utilise a simulation. Recall that this course employs the TangoNet simulation that offers its users an effective introduction to the concepts of valuing and managing intangible assets. In fact, Bontis and Girardi (2000) have empirically shown a statistically significant association between learning with TangoNet and modified behaviours related to KM. Overall, this game offers an alternative to the traditional classroom style training programmes used by universities. The simulation attempts to provide as real a world as possible. On the one hand, the TangoNet score on the applicability of the game in the alumni's careers was lower compared to those of other course components. This may be explained by an assumption that some graduates are not currently involved in the management and evaluation of intangible assets. On the other hand, we believe that the lack of correlation of TangoNet scores with other scores demonstrates the uniqueness of this teaching tool and that the simulation was still memorable years after the course was completed.

The final reason why this course provides a long-lasting impact for students is its exposure to best practices. Through a variety of pedagogical techniques, students are exposed to a host of key leaders, tools, technologies, methodologies, organisations, research articles, books and case studies within the field. However, all of these concepts are weaved together in a seamless series of lectures that highlight the linkages among them. As students learn the key variables that underlie the success of a KM initiative, they develop their own personal evaluation template. It is this mindset that we argue stays with students and provides the impetus for the long-term learning impact of this course. In addition to learning from the instructor, TA and peers, students are also exposed to a world-class conference that is hosted annually by McMaster University. The World Congress on Intellectual Capital is the nexus for KM academics and professionals worldwide (Bontis and Nikitopoulos, 2001). Students in this course take full advantage of this global experience by learning from both practitioners who have implemented KM initiatives and academics who have researched their impact.

KM course designers have typically started from a home discipline such as library science (*e.g.*, University of Toronto), engineering (*e.g.*, George Washington University), e-commerce (*e.g.*, Queen's University), and leadership (*e.g.*, Royal Roads University). Although these approaches appeal to a certain aspect of the MBA marketplace, it is our contention that KM must be taught from a strategic management approach thereby providing a generalist perspective. This affords the instructor and students alike the learning opportunity to embrace all of the multi-disciplinary outcomes that this rich field provides.

In terms of KM initiatives that the respondents came across in the workplace, most companies invest in their stock of technological capital. This observation is consistent with the current industry trends in Canada that confirms the validity of the findings that a majority of KM initiatives typically start by focusing on technological projects as opposed to human capital ones. There are two reasons for this. First, most KM vendors and consultants started off in the late 1990s by selling off-the-shelf technological solutions such as records management (*e.g.*, FileNet.com), document repositories (*e.g.*, OpenText.com) and intranet-based solutions (*e.g.*, Knexa.com). This in turn created an educational bias for customers that now started to equate KM with IT-based solutions. Second, KM leadership in organisations is usually represented by the office of the CKO (Bontis, 2001; 2002). In a survey of CKOs from both government and business, the majority of them were found to have been housed within the IT department. To this end, it was believed that the course served students well given that various KM stock enabling technologies were reviewed. All barriers to KM initiatives, for example, ineffective organisational structures and budget constraints were also discussed in the course during the lectures and case studies.

With respect to the important qualifications of a successful KM manager, the alumni suggested that he or she should have a broad background that included both 'hard' technological competencies as well as 'soft' human resource skills. The P727 course pro-actively examines both ends of this spectrum in all its case studies which prepares students for understanding the important role both views represent. Successful KM managers are well-versed at all organisational aspects and are first and foremost strategists. This is consistent with other research findings that show the main characteristics and skills that CKOs in both business and government possess include previous exposure (*e.g.*, secondments or lateral promotions) in the HR and IT departments of their firms prior to being appointed to the CKOs office (Bontis, 2001).

6   Conclusion

What might be the future of KM education? It is our belief that the KM curriculum must continue to embrace as many management disciplines and pedagogical techniques as possible. Although this field has grown significantly in the last ten years or so (Serenko and Bontis, 2004), there is still ample room for further conceptualisation, empirical research and best practices case studies. As more KM analysts and managers get hired and promoted, so goes the value of professional KM education. There are an increasing number of CKOs appointed by large business and government organisations. Even though many of them have never taken a KM course (Bontis, 2001), their presence at the so-called 'C-level mahogany table' will require them to embrace a more holistic perspective of the organisation.

   This particular study will benefit in the future from more alumni that can be surveyed and tracked. As these MBA graduates climb the corporate ladder, we will continue to evaluate the impact that their original education had on their careers. Another research opportunity might present itself if we endeavour to contact each course graduate for a refresher seminar a few years from now. Not only will this provide the graduates with an opportunity to update their mental models on what KM practices have since been developed, but it will also allow the teaching administration to seek further feedback in order to enhance the curriculum.

Acknowledgement

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Notes

1   See www.eric.ed.gov.

2   For more information, refer to the National Association of Colleges and Employers website at www.naceweb.org.

3   As suggested by the Ethics Research Board, some respondents might believe that if gender or age information was provided, the researchers may discover their identity given a variety of other course-specific questions.

Appendix 1 The questionnaire

General questions

1   When did you take P727?

2   What was your status at McMaster University when you took P727?

3   When did you graduate from the MBA programme?

4   How long have you worked full-time after completing the MBA programme?

5   How long have you worked part-time after completing the MBA programme?

6   Would you characterise your current employment position as 'knowledge-based'?

Course effectiveness and satisfaction

7   I still retain some of the key learning principles I acquired from the P727 course. (agree/disagree – 7 point Likert-type scale)

8   P727 was a useful elective course relative to other elective courses that I took during my MBA. (agree/disagree – 7 point Likert-type scale)

9   My appreciation for strategic knowledge management has increased since I took the course. (agree/disagree – 7 point Likert-type scale)

10 How useful were the following teaching methods used in the P727 course in terms of applying KM concepts in your professional career? (very useful/not useful at all – 6 point Likert-type scale):

   •   Lectures

   •   Case studies

   •   Assignment 1 (Human Capital Matrix)

   •   Assignment 2 (KM Technology Summary)

   •   KM technology presentations by company representatives

   •   TangoNet simulation game

11 What was your primary motivation for taking P727 course?

Course links to job or career

12 I feel my understanding of KM principles acquired from the P727 course differentiates me from my colleagues. (agree/disagree – 7 point Likert-type scale)

13 I try to provide a KM perspective when I discuss organisational issues with my current colleagues. (agree/disagree – 7 point Likert-type scale)

14 I continue to realise benefits from this course in my workplace environment. (agree/disagree – 7 point Likert-type scale)

15 Taking P727 changed my understanding of the nature of contemporary organisations. (agree/disagree – 7 point Likert-type scale)

   •   If you believe taking P727 changed your understanding of the nature of contemporary organisations, please specify how: (open-ended)

16 All things considered, what impact has the P727 course had on your professional career? (major/some/minor/no impact)

17 In your job search(es) after taking P727, did you target KM-related positions? (targeted KM positions only/targeted more KM than non-KM positions/targeted both KM and non-KM positions/targeted more non-KM than KM positions/did not target any KM positions)

18 During my job search(es) I felt (feel) that the knowledge I acquired from the P727 course provided me with a competitive advantage. (agree/disagree – 7 point Likert-type scale)

Workplace specifics

19 Have you had any training in knowledge and/or intellectual capital management other than P727 (including patents, copyrights and trademarks)? (yes/no/not sure)

   •   If you have had such training, please specify: (open-ended)

20 How useful would any training in knowledge and/or intellectual capital management be to your current job? (very useful/not useful at all – 6 point Likert-type scale)

21 What KM initiatives have you come across in your workplace since you graduated? (open-ended)

22 What challenges does your organisation face that prevent KM initiatives from being fully realised? (open-ended)

23 What qualifications do you consider most important for a KM manager to possess? (open-ended)

Appendix 2 Course evaluation and student feedback

The following are a summary of teaching evaluation and some of the student testimonials that relate to the course curriculum (comments specifically related to the instructor have not been included here):

Table 7   Course evaluation summary

Items	2001	2002	2003	2004
Work load (1 = very light, 5 = very heavy)	3.44	3.08	3.35	3.56
Pace of material (1 = too slow, 5 = too fast)	3.41	2.98	3.60	3.41
Organisation of course (1 = very poor, 10 = excellent)	7.34	8.50	8.22	7.71
Value of course (1 = very poor, 10 = excellent)	6.56	8.09	7.72	7.71

2001

I liked the course website, everything I needed to know was easily accessible.

The course would be improved if there were smaller class sizes and better room layout where we can face each other and have discussions.

The multi-media was awesome.

The course had very current information, it is a cutting edge course – I appreciate that, and wish there were more courses like that in the programme.

The course could be improved with guest lectures.

I liked the TangoNet simulation because it was a good introduction to recruiting and pitching.

I liked the Saratoga data analysis different perspective on financial statements.

2002

The guest lectures were excellent.

The TangoNet simulation was fairly tough, I would have liked to work on it from home.

I liked the KM technology expo.

Very interesting in class lectures and discussions.

Application of topics to real-life situations.

2003

I liked the breadth of material, I expected just and IT view.

I liked the customised weighting of the course.

I liked the interactive, group work.

I liked the TangoNet simulation and the KM Technology Expo.

Choosing your own mark structure was an aspect of the course I liked because everyone is good at different things.

2004

The causal modelling was fantastic.

Interesting international perspective was useful.

I liked the interactive case discussions in class.

Lectures were excellent.

Recent graduate placements

KM Analyst – Accenture

KM Analyst – McKinsey & Co.

KM Analyst – Toronto General Hospital

KM Analyst – London Health Sciences Corporation

KM Analyst – Bell Canada

Note: the course was not offered in 2005 since the instructor was on a research sabbatical.