

## IS 6848, Spring 2007

### Knowledge Management and Business Intelligence

Class	Tuesday, 6:55-9:35 pm	Room	SSB 102
Instructor	Dr. Rajiv Sabherwal University of Missouri System Curators Professor	Phone	314-516-6490
Office Hours	Tuesday 4:00-6:00 p.m., & by appointment	Office	CCB 206
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#### MOTIVATION FOR THE COURSE

Knowledge management is the process of creating, and drawing value from, an organization's intellectual assets. It deals with how to best leverage the organization's knowledge internally as well as externally. The role of knowledge in the performance of individuals and organizations has long been recognized. However, the emphasis on knowledge management (KM) within business organizations has risen dramatically in the last few years, to some extent because of the rapid progress in information technology capabilities. Improved KM can help enhance organizational efficiency as well as effectiveness, and lead to sustainable competitive advantage. This has raised the stakes in KM considerably. In recent years, increasing attention has consequently been given to concepts such as the "knowledge-based economy," "intellectual capital," "organizational learning," "business intelligence," and so on.

Designed for managers who need to understand the role and potential contribution of knowledge and KM within organizations, this course should help you in making decisions about how to use information technology and social tools to improve the management of knowledge within your organization. It illustrates through case studies and the literature, how leading organizations have achieved (and are currently seeking) benefits from their KM and learning strategies.

#### COURSE DESCRIPTION

The course will cover the major functions of knowledge management and business intelligence. It will discuss techniques, concepts, technologies, and applications dealing with KM. Developing a supportive culture and structure to encourage knowledge sharing will be discussed. Specific topics to be covered in the course include:

- KM tools, technologies, and systems, including knowledge repositories, knowledge portals, and expert seeker systems;
- Creating and sustaining a knowledge-sharing culture;
- Managing and measuring intellectual capital;
- Managing knowledge in networked organizations, including inter-organizational alliances and supply chains;
- Aligning knowledge with business strategy;
- Risks of knowledge loss and knowledge leakage;
- Business intelligence; and
- Social aspects of knowledge management.

You should be able to integrate various and disparate material (cases, project, textbook, and lectures) into a coherent "big picture". To this end, this course will encourage you to think, argue logically, and apply the concepts and knowledge to real-life situations. The course will be conducted using a combination of lectures, case discussions, examples of innovative approaches to KM, in-class conversations and exercises, the worldwide web, and group projects and presentations.

#### READING MATERIALS

**Textbook:** *Knowledge Management: Challenges, Solutions, and Technologies*, by I. Becerra-Fernandez, A. Gonzalez, and R. Sabherwal, Prentice Hall, 2003.

I will provide the following additional readings/case through MyGateway. Each student can also directly obtain these readings either from a URL (given below) or through a free download using ABI Inform:

1. "Business Intelligence Gets Smart(er)," by A. Dragon, *CIO Magazine*, Sept 15, 2003. Available at <http://www.cio.com/archive/091503/smart.html>.
2. "7 Rules to Rolling Out BI," by A. Dragon, *CIO Magazine*, Sept 15, 2003. Available at [http://www.cio.com/archive/091503/smart\\_sidebar\\_1.html](http://www.cio.com/archive/091503/smart_sidebar_1.html).
3. "KM Meets Business Intelligence: Managing knowledge and information at Intel," *Knowledge Management Review*, Jan/Feb 2006, pp. 10-15.
4. "Towards real-time business intelligence," by B. Azvine, Z. Cui and D.D. Nauck, *BT Technology Journal*, 23(3), July 2005, pp. 214-225.
5. "Dashboards in your future," by A. Marcus. *Interactions*, 13(1), Jan/Feb 2006, pp. 48-49,60.
6. "How dashboards can change your culture," by C. Dover, *Strategic Finance*, 86(4), Oct 2004, pp. 42-48.
7. "Real-time Business Intelligence: Best Practices at Continental Airlines," by H. Watson, B.H. Wixom, J.A. Hoffer, R. Anderson-Lehman, and A.M. Reynolds. *Information Systems Management*, Winter 2006, pp. 7-18.

The students should purchase the following cases from Harvard Business School Publishing (<http://www.hbsp.harvard.edu>). Please note that I have created this course on HBS's web site, and am sending you a message regarding it. Will also post that message on MyGateway. If you follow the procedure indicated there, you should receive these cases at \$3.70 each, which is the academic discount price, instead of \$6.00 each.

1. Buckman Laboratories (A) (Product No: 9-800-160)
2. Knowledge Management at Accenture (PN: 905E18)
3. Hill & Knowlton: Knowledge Management (PN: 904E03)
4. Siemens ShareNet: Building a Knowledge Network (PN: 9-603-036)
5. Managing Knowledge and Learning at NASA & the Jet Propulsion Laboratory (JPL) (PN: 9-603-062)
6. Montgomery Watson Harza and Knowledge Management (PN: BAB102)
7. Business Intelligence Software at SYSCO (PN: 9-604-080)
8. BitTorrent: Copyrights in Cyberspace (PN: 9-806-169)

### EXPECTATIONS OF PERFORMANCE

You are expected to prepare for, attend, and **contribute** to, the classes on a regular basis. 18% of the course grade is based on class contribution.

Another forum for you to demonstrate your learning will be available through **three exams (best two will be considered)**, which account for 50% of the course grade.

Each student will prepare an individual paper on the impact of a technology on knowledge management/business intelligence, and present the findings to the class. The paper and the presentation are worth 4% and 3%, respectively.

Finally, you will learn through a **group project**. Working in a group of **1 TO 4** students, you will examine an organization's KM approach and its historical evolution, as discussed later in this syllabus. Each group will prepare a case and a proposal, and present them in class at the end of the semester. These are worth a total of 25%.

Thus, your grade will be calculated as follows:

Class Contribution	= 18%
Exams (best two of three @25% each)	= 50%
Individual paper (4%) and presentation (3%)	= 7%
Group Project (Case = 15%; proposal = 4%; presentation = 4%; peer evaluation = 2%)	= 25%

### GRADING POLICY

Letter grades will not be assigned to individual components of the course. Only points (numeric scores) will be assigned. These scores will be added at the end of the course. The exact cutoff points for final grades will depend on the point distribution. But the following is a rough guide:

Points percentage	Letter grade
> 90	A-, A
80 - 89.9	B-, B, B+
70 - 79.9	C-, C, C+
55 - 69.9	D-, D, D+
< 55	F

### CLASS CONTRIBUTION (18%)

We will all need to read each case, reading, or chapter BEFORE we discuss it in class. In preparing each case, please carefully consider the "case questions," which will be given in advance. You are expected to help all of us by contributing to the discussions in class. The class discussions should be conducted in a friendly fashion, although we may have occasional disagreements and debates. I will keep track of **your contributions in each class**.

Of course, if you have prepared the material but do not come to class, the rest of us will be deprived of the opportunity to benefit from your insights. Therefore, **attendance** will be taken in every class, and a penalty of 0.50 point will be applied for every class missed excluding ONE "free" absence.

### EXAMS (50%)

There will be three exams, best two of which will be considered for each student. Each exam is cumulative, and will encompass all the material covered until then. Each exam will include four essay questions, of which you will be expected to answer any three. Each exam will be of **two-and-a half (2-1/2) hour duration**.

Each exam will be open-book, open-notes, and open computers. You can also use the internet to access information posted on MyGateway or other websites. You can also take one or more exams at your home or your office. However, you should not seek any other individual's (including other students') help at any point during any exam. Moreover, if you choose to take the exam off-campus, you will be responsible for ensuring that I receive the exam by the scheduled end of exam time.

### INDIVIDUAL PAPER & PRESENTATION (7%)

Each student should study the application of one of the following technologies on knowledge management/ business intelligence in organizations.

1. Blogs
2. Databases
3. Digital dashboards
4. Expert systems
5. Expertise locator systems
6. Instant messaging
7. Intranets
8. Smartphones
9. Podcasting
10. RFIDs
11. Videoconferencing
12. Wikis
13. World Wide Web
14. Other technology (please specify and define)

Each student should identify his/her top 6 choices (in rank order) from among the above technologies, and e-mail them to me latest by January 23 evening. Based on the inputs received from you, I will assign each student one technology. I will try to do so

in a “first come first served” fashion such that: (a) the highest possible number of technologies are covered; (b) there is no duplication; and (c) each student gets one of the top 6 choices.

Each student will prepare a short paper on the application of the selected technology in the area of knowledge management. This paper should: (i) define the technology using prior literature; (ii) describe the history of development in the realm of that technology; (iii) describe the ways in which the technology can be used in knowledge management/business intelligence; (iv) provide examples of such applications; and (v) make some projections regarding the future developments in the technology and its impact on knowledge management/business intelligence. The paper should at most 4 single-spaced pages long, excluding Tables, Figures, and bibliography.

Each student will also present his/her individual paper in class. Each such presentation will be of 8-minute duration, with an additional 2 minutes available for Q&A. The presentation will be on April 3, and the paper will be due the same day.

### GROUP PROJECT (25%)

Student groups of **1 to 3** will study one organization’s use of KM tools, technologies, and systems. The information about this organization’s key knowledge areas, and the way in which the organization manages those knowledge areas, should be obtained through a combination of means, including: personal or phone interviews with the organization’s employees; articles/cases from Wall Street Journal, Fortune, Business Week, CIO, Harvard Business Review, Sloan Management Review, etc.; and the worldwide web. If you can’t interview any executive from the organization, either personally or by phone, you should obtain a greater variety of published information so that you can form reliable and rich conclusions. I will hold any information you provide in the report in the STRICTEST CONFIDENCE. If any portion of the report is used for other purpose, the presentation will be such as to make it impossible for the readers to identify the specific firm or individuals.

Based on the above information, each group will present its findings in **two documents and one in-class presentation**. The three documents include a case and a proposal for improvement in that organization’s knowledge management.

The **case** (worth 15% of the course grade) should be similar in style to the cases discussed in class. It should be 8 to 10 single-spaced pages, excluding appendices (Tables, Figures, bibliography, etc.), and should include the following:

Executive Summary	5%
1. General background of the organization	5%
2. Description of the organization’s key knowledge areas	10%
3. Description of the organization’s use of IT-based tools for managing knowledge	15%
4. Description of the organization’s use of socialization-based tools (e.g., meetings,	15%

brainstorming) for managing knowledge	
5. Description of the knowledge sharing climate within the organization, including: (a) incentives for knowledge sharing; (b) structural roles (e.g., Chief Knowledge Officer) related to KM	15%
6. Description of the changes that have occurred with respect to #2, #3, #4, and #5 over the last five years	15%
7. Conclusion (Including recommendations & links to literature)	20%

**ONE DETAILED PROPOSAL**, which is worth 4% of the course grade, should be submitted. The proposal should be 3 to 4 pages long (single-spaced), excluding appendices (Figures, Tables, etc.). It should focus on **improvement in knowledge management**. In this proposal, you should describe (a) the problems in the current KM, focusing on specific aspects (e.g., knowledge creation, sharing, and utilization of clearly identified areas of knowledge), (b) the proposed improvement (which should not be a laundry list of several minor changes, but a substantially different approach – think “process reengineering”; and (c) the costs and benefits of the proposed approach to KM. In developing this proposal, you may borrow ideas from the textbook or the cases discussed in class, but creativity (as long as not so wild as to be indefensible) will also be considered very important.

**GROUP PRESENTATION (4%)**: Each group will present in class its **case study and proposal**. The focus should be on the proposed new approach to KM, but the current and historical developments related to KM (as described in the case study) should be included to provide the necessary context. Each presentation is expected to last about 15 minutes (plus Q&A), although the exact time available will depend on the number of groups. At the start of the presentation, each group will provide to the rest of the class: (a) a one-page handout summarizing the case and proposal; (b) a copy of the slides used for the presentation.

**PEER EVALUATIONS (2%)**: All members should contribute to the group effort. To increase the likelihood that this happens, 2 points in the course will be based on peer evaluation by group members. For this evaluation, each student will allocate 100 points among the OTHER members of his/her group, and submit these peer evaluations in a closed envelope along with the group’s final assignment. If a student does not submit peer evaluations, it will be assumed that (s)he believes that the other group members contributed equally.

Each group is expected to submit a one-page **project idea** identifying the organization, the nature of its IS’s, your reasons for selecting this organization. and possible sources of information. The approval of the project idea by me will avoid duplication and ensure proper focus. This project idea should be submitted **early in the semester** so that it can be approved latest by 02/06/2006.

## **CLASS SLIDES**

- Class slides will be posted on MyGateway.
- The slides for lectures will be posted about 24 hours before each class.
- The slides for cases will be posted soon AFTER class.

## **NOTE**

If anyone has a health condition or disability, which may require accommodations in order to effectively participate in this class, please contact the Disability Access Services Office in 144 Millennium Student Center at 516-6554. Information about the disability will be regarded as confidential.

## **CONTACTING ME**

1. You can meet me during my office hours or set up an appointment.
2. You can contact me via e-mail. Please include IS 6848 as the first part of the subject of your e-mail messages. If you are attaching files, they must be in Microsoft Office or ASCII (text) formats, and should be carefully checked for virus. I will most likely reply to your e-mail messages within 24 hours.
3. You can call me at 516-6490. Again, I will try to reply to voice messages within 24 hours. But e-mail is much better.
4. Finally, in case of an emergency, please send me an e-mail message with the subject as "EMERGENCY ... IS 6848" and I will reply to it as soon as I see the message.

## **INSTRUCTOR BIO**

I am University of Missouri System Curators' Professor, the Emery C. Turner Professor of Information Systems, and Director of the Ph.D. Program in Business Administration. I am the Departmental Editor (information technology) for *IEEE Transactions on Engineering Management*, and serve on the editorial boards for *Information Systems Research*, *Journal of MIS*, and *Journal of AIS*. I recently completed a 3-year term as Senior Editor of *MIS Quarterly*.

My research focuses on knowledge management, information systems strategy, and social aspects of systems development. It has been published in journals such as *Information Systems Research*, *Management Science*, *MIS Quarterly*, *California Management Review*, *Communications of the ACM*, and *Organization Science*. Some of my research has been funded by the Advanced Practices Council of the Society for Information Management.

I have conducted detailed case studies at a variety of leading organizations, including NASA Kennedy Space Center, Ryder System Inc., Burger King, Microsoft, Miami Dade County, and Tata Consultancy Services. I have spoken frequently to academic and business audiences in United States, Canada, Norway, Finland, and India, and have taught executive or company-based courses on *Project Management*, *Global Electronic Commerce*, and *Organizational Information Systems*.

## COURSE SCHEDULE (Revised)

Date	Topic	Cases	Textbook/Readings	Submissions
1/16/2006	Introduction		▪ Chapter 1	
1/23/2006	Knowledge	Buckman Laboratories (A)	▪ Chapter 2	<b>Project idea (draft)</b>
1/30/2006	KM solutions	Knowledge Management at Accenture	▪ Chapter 3	
2/6/2006	Organizational impacts of KM	Hill & Knowlton: Knowledge Management	▪ Chapter 4	<b>Project idea (final)</b>
2/13/2006	Class canceled		▪	
2/20/2006	<b>Exam 1</b>			
2/27/2006	KM systems	Siemens ShareNet: Building a Knowledge Network	▪ Chapters 13-16	
3/6/2006	Factors affecting KM	Managing Knowledge and Learning at NASA & the Jet Propulsion Laboratory (JPL)	▪ Chapter 5	
3/13/2006	Assessment of KM	Montgomery Watson Harza and Knowledge Management	▪ Chapter 6	
3/20/2006	<b>Exam 2</b>			
3/27/2006	Spring Break (No class)			
4/3/2006		<b>Individual Technology Presentations</b>		<b>Individual paper</b>
4/10/2006	Business intelligence ... 1	Real-time Business Intelligence: Best Practices at Continental Airlines	<ul style="list-style-type: none"> <li>▪ Business Intelligence Gets Smart(er)</li> <li>▪ 7 Rules to Rolling Out BI</li> <li>▪ KM Meets Business Intelligence</li> <li>▪ Towards real-time business intelligence</li> <li>▪ Revisit Chapter 13</li> </ul>	
4/17/2006	Business intelligence ... 2	Business Intelligence Software at SYSCO	<ul style="list-style-type: none"> <li>▪ Dashboards in your future</li> <li>▪ How dashboards can change your culture</li> </ul>	
4/24/2006	Intellectual property, knowledge leakage	BitTorrent: Copyrights in Cyberspace	▪ Epilogue	
5/1/2006	Group presentations Conclusions, Recap			<b>Case, proposal, peer evaluation, handout to class.</b>
5/8/2006	<b>Exam 3</b>			