

IT4120-Knowledge Management

Introduction

Lecture 1

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Course Overview

□ Introduction

□ Knowledge Processing

- Knowledge Acquisition, Representation and Manipulation

□ Knowledge Organization

- Classification, Categorization
- Ontologies, Taxonomies

□ Knowledge Retrieval

- Information Retrieval
- Knowledge Navigation

□ Knowledge Presentation

- Knowledge Visualization

□ Knowledge Exchange

- Knowledge Capture, Transfer, and Distribution

□ Usage of Knowledge

- Access Patterns, User Feedback

□ KM Techniques

- Topic Maps, Agents

□ KM Tools

□ KM in Organizations

Overview Introduction

□ Motivation

- Why do we need to know all this stuff?

□ Objectives

- What you should know afterwards

□ Evaluation Criteria

- How I can find out if you know what you should know

□ Warm-Up

- Review of relevant concepts
- Overview new topics
- Terminology

□ Case Study: My Personal Need for KM

- Finding and organizing materials for this class
- Tools to support this

□ Important Concepts and Terms

- all the old and new terms

Logistics

- Introduction
- Course Materials
 - textbook:
 - handouts: some
 - Web pages: tons
 - CourseInfo: SLIIT courseweb
- Course Evaluation

Objectives

- ◆ To be aware the role of knowledge in professional and private life
- ◆ To understand the impact of knowledge (or lack of it) for important decisions
- ◆ To understand the need of knowledge management to deal with the large amount of knowledge and information
- ◆ To discuss the role of computer-based tools and technologies for knowledge management

“The basic economic resource is no longer capital, nor natural resources, nor labor. It is and will be knowledge.”

Peter Drucker

What is knowledge management

- ◆ Knowledge management can be difficult to define, because it encompasses a wide range of practices, tools, concepts, and techniques
- ◆ KM is the process through which organizations generate value from their intellectual and knowledge-based assets
- ◆ Most often, generating value from such assets involves codifying what employees, partners and customers know, and sharing that information among employees, departments and even with other companies in an effort to devise best practices
- ◆ It's important to note that the definition says nothing about technology; while KM is often facilitated by IT, technology by itself is not KM.

Why is knowledge management important?

- ◆ Knowledge is often an organisations most valuable asset
- ◆ Aging populations in many countries means imminent mass retirements, how is the knowledge of these employees going to be captured
- ◆ Outsourcing transfer of knowledge from parent company to vendor

Knowledge Management Trends

◆ Survey of 200 Large Firms found:

- ◆ 82% have KM underway in their organization
- ◆ 50% have KM staff & budget
- ◆ 27% have a Chief Knowledge Officer
(Conference Board)

◆ Survey of nations leading CEOs:

- ◆ Second top priority “Improving KM” (88%)
(Foundation for Malcolm Baldrige Award)

Knowledge Management Trends

By 2001, enterprises that lack ongoing KM infrastructure will lag KM-enabled competitors by 30-40% in speed of deployment for new competitive programs and products

(Gartner Group)

Knowledge

Knowledge is a fluid mix of framed experience, values, contextual information and expert insight that provides an environment and framework for evaluating and incorporating new experiences and information.

Thomas Devenport

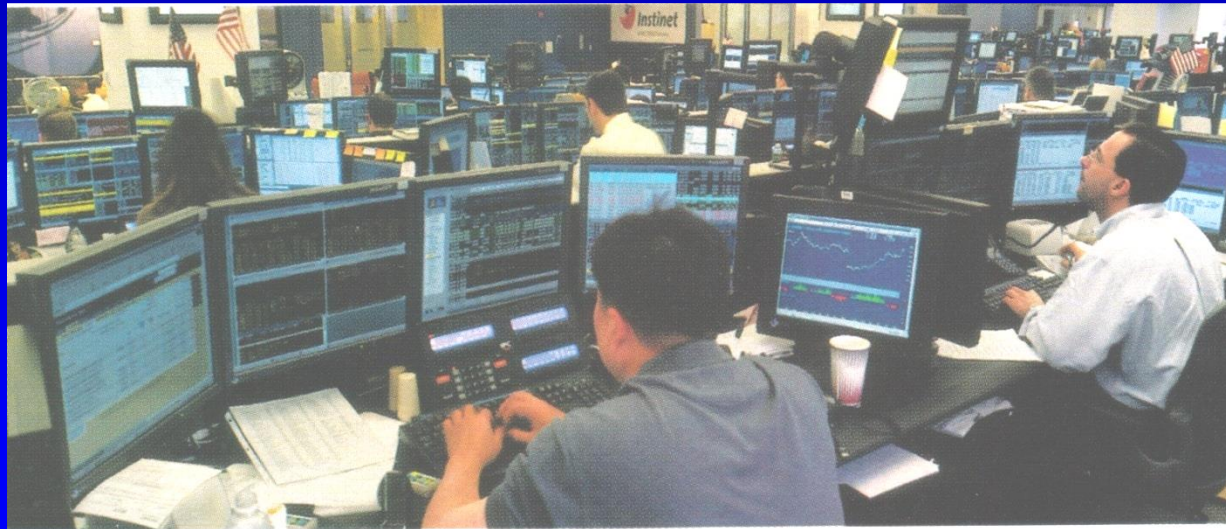
Knowledge....

“Data processing can be performed by machine, but only human mind can process knowledge or even information.”

Jesse Shera in Machlup and Mansfield's
*The Study of Information: Interdisciplinary
Messages*. NY: Wiley, 1983.

Knowledge Management

- ◆ Management of organizational knowledge for creating business value and generating competitive advantage
- ◆ Knowledge Management is the ability to create and retain greater value from core business competition



What is Knowledge Management?

- ◆ Information Technology perspective
 - ◆ computers as supporting tool for dealing with large quantities of Knowledge and Information
- ◆ Business perspective
 - ◆ benefits for organizations

Knowledge Management

“Knowledge Management (KM) is an effort to increase useful knowledge within the organization. Ways to do this include encouraging communication, offering opportunities to learn, and promoting the sharing of appropriate knowledge artifacts.”

McInerney, C. (2002). Knowledge management and the dynamic nature of knowledge. JASIST, 53 (2).

The propagation of Knowledge

◆ Wall Street (NY)

- ◆ no physical assets
- ◆ make money by utilizing knowledge about investment opportunities

◆ Consultants

- ◆ have knowledge about some specialized tasks
- ◆ tell customers what to do

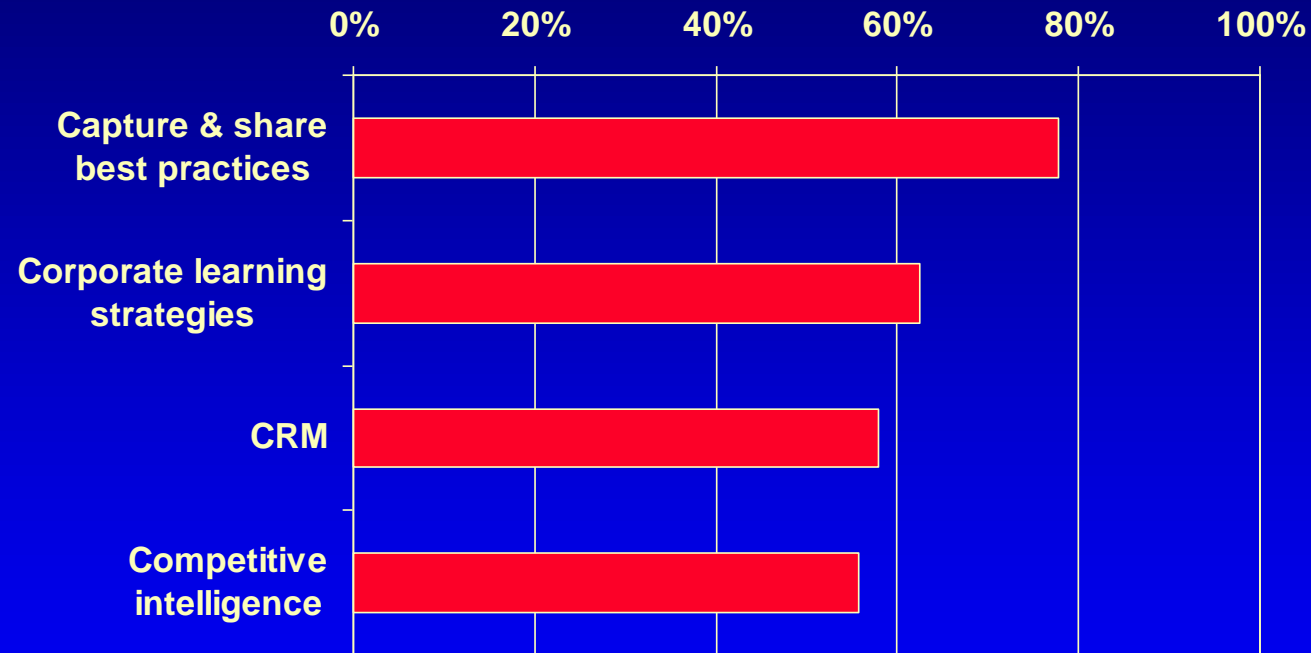
◆ “Real Estate Brokers”

- ◆ companies that don't own any physical facilities, but buy and sell real estate
- ◆ make good profit during economic growth

Motivation

- ◆ **the amount of information and knowledge available increasing steadily**
 - ◆ it becomes difficult to keep track of relevant knowledge
- ◆ **the demand for applying knowledge to a particular task also becomes stronger**
 - ◆ job expectations
 - ◆ competitive pressure
- ◆ **Gain benefits by utilizing knowledge become greater**
 - ◆ higher profits
 - ◆ better products
 - ◆ more knowledgeable people

What are USA companies doing?



[Source: Milan, J. KM: A revolution waiting for IR. Paper presented at the 41st Annual AIR Forum.]

KM Phases

- ◆ 1992 - 1995: **productivity enhancement**
 - ◆ information technology used to share knowledge across organizations
 - ◆ Lotus Notes, Web pages, project databases, best practices, etc.
- ◆ 1995 - 2000: **customer relations**
 - ◆ how can information about customers be utilized
 - ◆ data warehousing, data mining
- ◆ 2000 -2005: **interaction**
 - ◆ interactive Web pages, e-commerce
- ◆ 2005 -?: **semantics**
 - ◆ social computing,...

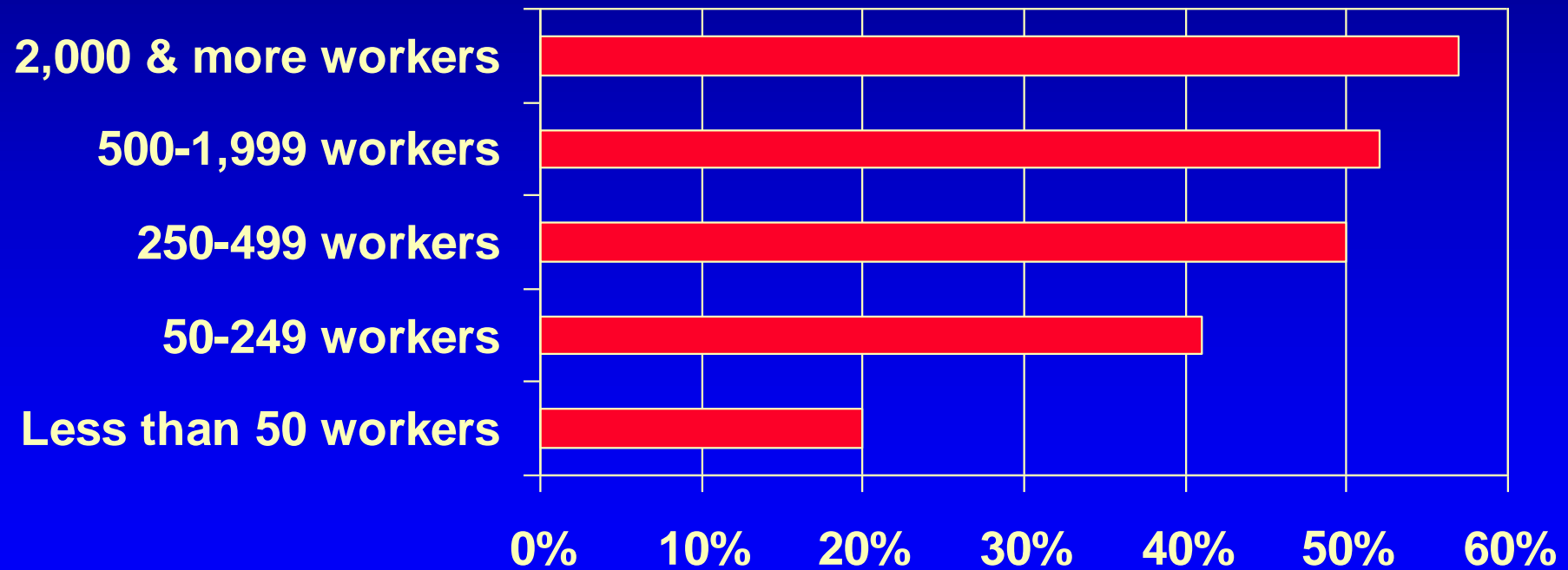
The Learning and Communication Process Model

- ◆ **Innovation** is a way of life
- ◆ **Flexibility** and the **ability to act quickly** is necessary in a changing environment
- ◆ New projects can benefit from **coalitions** and **learning from in-house experts and creative thinkers.**



KM in Canada

Proportion of firms with dedicated spending on KM practices



Source: Statistics Canada. (2002) *Are we managing our knowledge?*

Case Study: KM for Course Preparation

- ◆ easy case: re-use existing material
 - ◆ textbook, presentation material, student assignments, exams, projects
- ◆ difficult case: brand-new course
 - ◆ no existing material suitable for teaching purposes
 - ◆ existing sources
 - ❖ research monographs, edited volumes, related textbooks, conference proceedings, journal special issues, articles, technical reports, white papers, company brochures, Web pages

Course Development as KM Application

◆ problem

- ◆ development of a course outline
- ◆ identification of relevant material
- ◆ extraction of relevant knowledge
- ◆ integration of various knowledge pieces
 - ❖ different representation media
 - ❖ paper (books, journals)
 - ❖ microfilm
 - ❖ digital (electronic versions of books, journals etc.; Web pages; data bases, computer programs)
- ◆ presentation of knowledge
 - ❖ presentation medium
- ◆ identification of evaluation criteria
- ◆ development of exercises

Tools for Course Preparation

- ◆ course outline *brain, paper, editor, spreadsheet*
- ◆ identification of material *brain, search engines, library catalog/DBs*
- ◆ organization of material *brain, folders, labels, directories, files*
- ◆ extraction of knowledge *brain, paper, text editor, helpers*
- ◆ integration of pieces *brain, presentation program, helpers*
- ◆ presentation of knowledge *brain, presentation program*
- ◆ evaluation criteria *brain, text editor*
- ◆ development of exercises *brain, text editor, helpers*
- ◆ *Deficiencies of tools*
 - ◆ much of the tedious work is left to the instructor
 - ◆ little support for important knowledge management activities
 - ◆ primitive tools are used for high-level tasks
 - ❖ directories, file names for the categorization of knowledge items

Summary

- ◆ with the increase in the amount of information and knowledge, knowledge management will play a very important role in our professional and personal lives
- ◆ although a lot of knowledge is available in digital form, computer support for KM is average.

Important Concepts and Terms

- ◆ extraction of knowledge
- ◆ identification of knowledge
- ◆ information
- ◆ integration of knowledge
- ◆ knowledge
- ◆ knowledge management
- ◆ presentation of knowledge
- ◆ tools

Knowledge Management for Students

- ◆ What are important KM needs?
- ◆ What KM tasks do you perform?
- ◆ Which tools and techniques do you use?
- ◆ What can be improved through smarter computers?

Course Evaluation

- ◆ The final course grade will be based on the results of a 2-hour final examination, midterm test and a project. The weights for the components are shown below.

Mini Project	20%
Midterm	20%
Final Exam	60%

- ◆ In real professional life, the way oral and written communications are presented is extremely important. To encourage students to do so, the marks assigned to written and oral work will consider syntax, diction, grammar and spelling.
- ◆ Regarding the written assignments, students should be aware of the SLIIT regulations regarding plagiarism.



TEXT Books

◆ COURSE TEXTBOOK:

Knowledge Management; Award E.M. Pearson Education, 2004

◆ REFERENCES:

Knowledge Management Systems Theory and Practice;
Barnes S., Thomas Learning, 2002

