Personal Knowledge Management

Who? What? Why? When? Where? How?

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Educom 98

Orlando, Florida

October 15, 1998

Our students, who will spend most of their working lives in the 21st century, will need to see the computer and related technologies as an extension of themselves, as a tool as important as the pencil was for the past several hundred years.

Personal

- A system designed by individuals for their own personal use

Knowledge Management

- **Davenport & Prusak**
  - **A systematic attempt to create, gather, distribute and use knowledge**
- **Lethbridge**
  - **The process of acquiring, representing, storing and manipulating the categorizations, characterizations and definitions of both things and their relationship**

Davenport & Prusak, *Working Knowledge*, HBS Press, 1998

"Practical Techniques for Organizing and Measuring Knowledge" Timothy Christian Lethbridge, Doctoral Thesis University of Ottawa, Canada, 1994

PKM: Who?

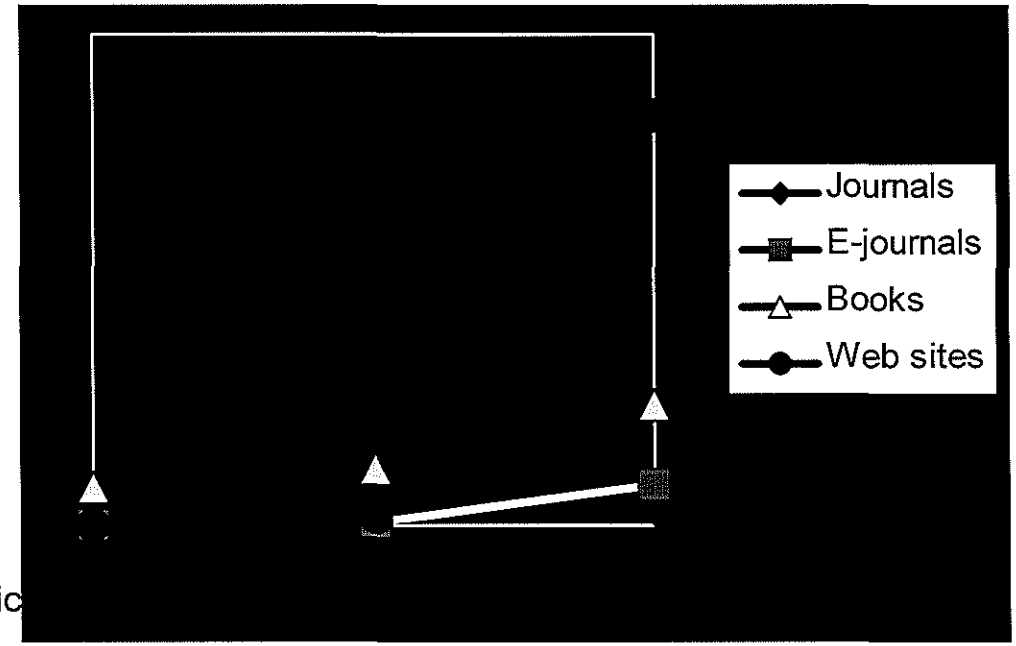
- Initially geared toward UCLA MBA students
- Introduced to corporate managers
- Generalize to anyone in any field

PKM: What?

- A conceptual framework to organize and integrate information that we, as individuals, feel is important so that it becomes part of our personal knowledge base
- A strategy for transforming what might be random pieces of information into something that is more systematic and expands our personal knowledge

PKM: Why?
Information Explosion

- **More than 30,000 new journals each year**
- **More than 1000 new WWW sites each day**



Ulrich's Directory of Periodic

UNESCO Statistical Yearbook

International Book Publishing: An Encyclopedia

Ciolek, The Six Quests for the Electronic Grail: Current Approach to Information Quality in WWW Resources, Jun

PKM: Why?
Information Chaos

If the WWW were compared to a library, the "books" on its shelves would keep changing their relative locations as well as their sizes and names. Individual "pages" in those publications would be shuffled ceaselessly. Finally, much of the data on those pages would be revised, updated, extended, shortened or even deleted without warning almost daily."

'Today's WWW, Tomorrow's MMM: the Specter of Multi-Media Mediocrity", T. Matthew Ciolek, in Educom Review, Sequence: Volume 32, Number 3, May/June 1997 (http://www.educom.edu/web/pubs/review/reviewArticles/32323/html)

PKM: Why?
Information Overload

- **Makes keeping track of information difficult**
- **Volume of information in the world degrades value due to redundancy and noise**

Orrin Klapp, Overload and Boredom : Essays on the Quality of Life in the Information Society, 1986

PKM: Why?
Shift in Responsibility

	Information Resource	
	Traditional	Web
Cost of production	High	Low
Cost of updating	Very high	Relatively low
Cycle time	Years	Hours
Distribution	Physical	Electronic
Number of producers	Controlled	Unlimited
Editorial review	Prior to publication	Essentially none
Content evaluation	By professional	By users

PKM: When?

- Must become part of routine and used whenever working with information and knowledge:
  - creating
  - acquiring
  - evaluating/assessing
  - organizing/storing
  - cataloging/classifying/indexing
  - retrieving from personal memory (your mind or your hard disk)

PKM: Where?

- One schema for all
  - Paper documents
  - Electronic documents
  - Web bookmarks
  - Personal home library

PKM: How?

- Initiate a process for developing a mental map of the knowledge with which you work
- Create an organizational structure which facilitates your finding and relating personal and professional information
- Use technology as an organic tool, an extension of your own memory, enhancing your natural abilities, skills, and talents for synthesis and processing of ideas for more effective problem solving and decision making
- Use the hard disk of your computer as a tool for initiating these processes

At The Anderson School, we present a strategy for integrating personal aspirations, career objectives, and educational experiences

Topics for Exploration

- "knowledge"
- Knowledge Management
- Personal Knowledge Management

- and how does all this relate to our laptop computer requirement?

We live in a sea of data, and we have ready access to information

Our challenge is knowledge and its management

Do you agree?

- begin with data
- add context to get information
- add understanding to get knowledge
- add judgement (values) to get wisdom

Personal Information Management Tools

- "To do" lists (60%)
- Calendar (45%)
- Address book (45%)
- Personal organizers (40%)
- Desk diary (40%)
- Pocket diary (35%)
- Appointment book (15%)
- Personal Digital Assistant (<10%)

Stephen Jones and Peter Thomas, "Empirical assessment of individual's personal information management systems, " Journal of Behavior and Information, v 16, n 3, 1997, 158-160.

Two Types of Knowledge

Tacit (Subjective) Knowledge

- Insights, intuitions, and hunches
- Knowledge of experience (body)
- Not easily visible and expressible
- Highly personal, hard to formalize, difficult to communicate or share with others
- Rooted in individual's actions and experiences, including ideals, values, or emotions

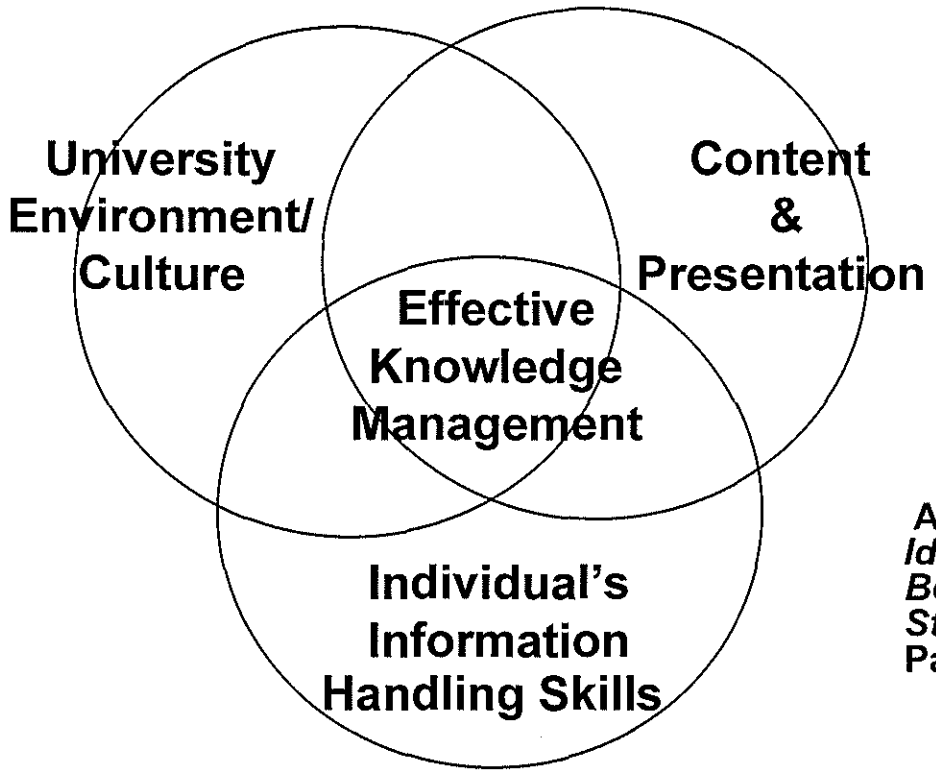
Explicit (Objective) Knowledge

- Formal and systematic
- Knowledge of rationality (mind)
- Can be expressed in words and numbers
- Easily communicated and shared in form of hard data, formula, codified procedures, or universal principles
- Can be expressed in computer code, chemical formula, sets of general principles

In Nonaka and Takeuchi, The Knowledge-Creating Company 1995, page 71

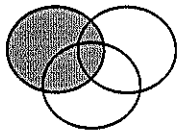
Knowledge Management in Context

- **Effective knowledge management is a result of the "fit" between the university environment and culture, the expectations of a particular class, and the individual's "competencies"**



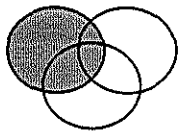
Adapted from David W. De Long, *Identifying Effective Information Behaviors -- An Exploratory Study*, Ernst & Young Working Paper, August 1993

University Environment/Culture



- **Goal is knowledge . . .**
  - Acquisition through study and assignment
  - Transmission through teaching, reading, study groups
- **"Traditional" View: Knowledge as Product**
  - K - 12 and maybe college
  - Classroom for teaching and learning
  - Library for preservation, organization, and circulation
- **"Emerging" Environments: Knowledge as Process**
  - Expectation that it's Life Long Learning
  - Blurring of roles and responsibilities in this new, digitally enhanced communication environment
  - Library evolving into "Information Resource Center" with knowledge guides and facilitators

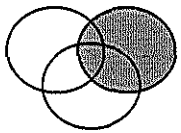
University Environment/Culture
However: a bit of reality...



- Divergent goals among faculty, staff, and students (i.e., Why are we here?)
  - Get a degree
  - Teach classes
  - Conduct research
  - Get a pay check
- Course mentality
  - Students take courses, not a curriculum
  - Faculty teach "their" class, lack of coordination within and between areas

Integration is left to the learner

Content and Presentation

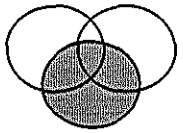


- Ideas that are novel, not easily understood, difficult to categorize, difficult to relate to each other
- Multiple ways of looking at ideas and multiple opinions about ideas
- Difference among faculty (presentation style, assignment, exams, etc.) across disciplines
- Difference among individual faculty approaches within a discipline

Relating concepts is left to the learner

Individual's Information Handling Skills

Computer-Mediated Information Behaviors



- **Ability to create new information sources**
  - Ability to envision and build new information systems, or dramatically redesign old ones
- **Ability to limit an information handling task**
  - Investing appropriate amounts of time in searching, analyzing, and packaging information
- **Taking advantage of "informating" capabilities of IT**
  - Informating: capability of IT to automate processes and at the same time provide insights into the processes themselves so improvements can be made (Shoshana Zuboff)

Application of skills is left to the learner

Knowledge Management Challenges

- **"Some problems appear to be intrinsic to knowledge management, whether it is being performed using a word processor, a formal-language based tool or pencil-and-paper."**

1. **Categorizing/Classifying**
2. **Naming things/ Making distinctions**
3. **Evaluating/Assessing**

Adapted from "Practical Techniques for Organizing and Measuring Knowledge"
Timothy Christian Lethbridge, Doctoral Thesis University of Ottawa, Canada, 1994

Anderson "Edge" Workshop
An Introduction to PKM

Concept	Activity
Searching/Finding	"Launch Pads"
Categorizing/Classifying	File structures
Naming things/ Making distinctions	Conventions
Evaluating/Assessing	Guidelines
Integrating/Relating	Demo of one implementation

Searching/Finding Heuristics

- **Database Selection Tool for organized information sources**
  - Help select appropriate starting points based on the characteristics of the data
  - http://www.anderson.ucla.edu/resources/library/libdgrid.htm
- **Internet Launch Pad for Web sources**
  - Understanding that different search engines have different value and attributes
  - http://www.anderson.ucla.edu/resources/library/libinet.htm
- **Course strategy pages for specific analysis**
  - Lead students through the kinds of questions which help them understand how to find the information they need
  - http://www.personal.anderson.ucla.edu/rita.costello/Mgt271c.html

Categorizing/Classifying Heuristics

- There are as many classification schemes as there are queries -- pick what works best for you
- Try to anticipate how you're likely to use something ("role" approach) before classifying
- Organize from the general to the more specific, putting items into narrowest (most specific) category
- Subdivide when you have new category, using the rule of 7±2 to clump material

Adapted from Ranganathan, Bliss, Dewey, Cutter, Martel, Lethbridge, and others

Naming things/ Making distinctions Heuristics

- Use names that are meaningful to you
- Make names as complete as necessary and as short as possible, to be able to identify content and minimize confusion
- Use unique terms for unique concepts
- Use names, abbreviations, file extensions, etc., in a consistent manner
- When there are two different ways of expressing the same concept, choose one term and reference the other (e.g., through hyperlinks)

Adapted from Ranganathan, Bliss, Dewey, Cutter, Martel, Lethbridge, and others

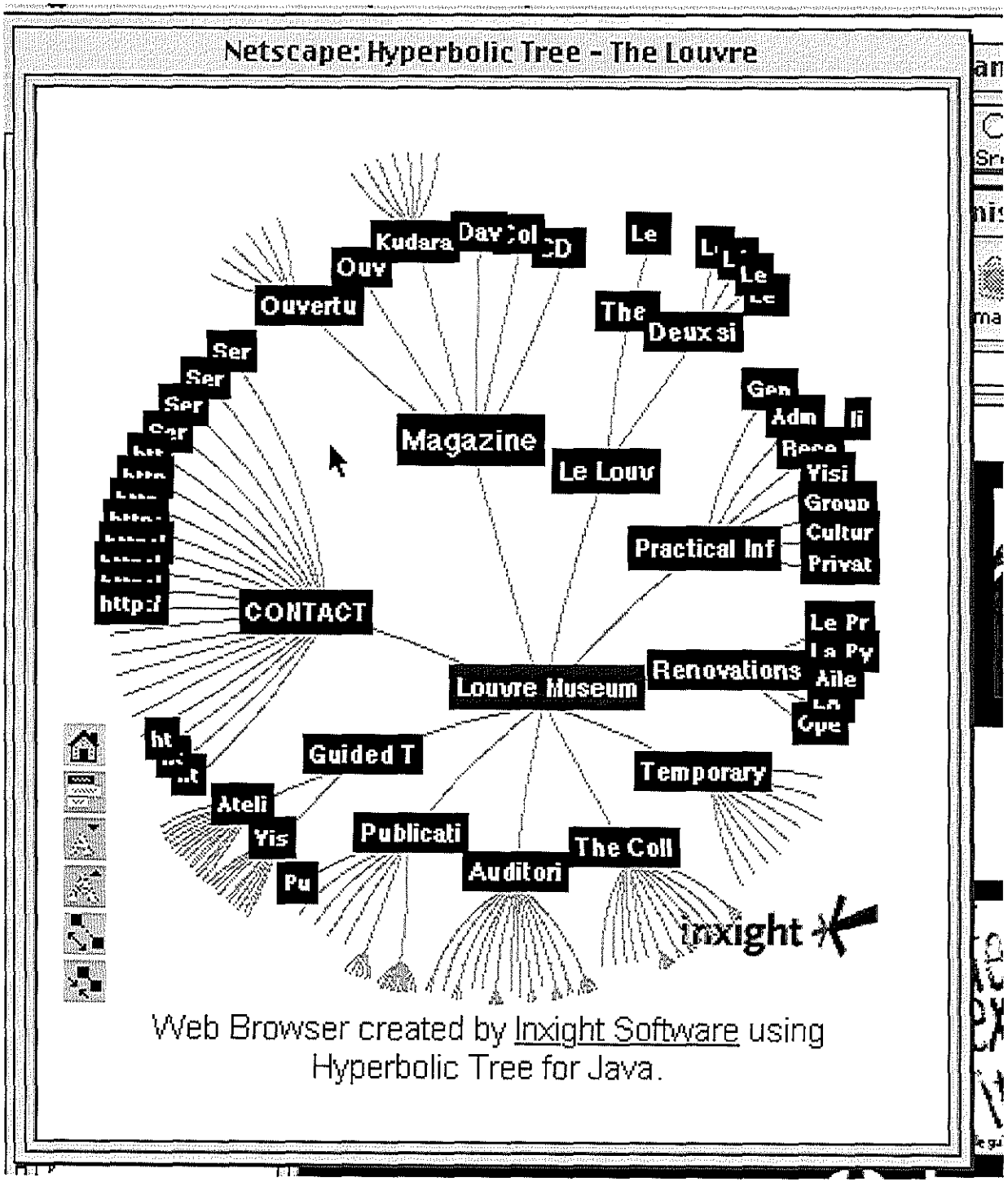
Evaluating/Assessing Heuristics for Web Based Sources

- Be aware that a site may not be complete and accurate
- What is the purpose of the site? Is any bias evident?
- Are there other sources that confirm or validate the information provided?
- When was the site last revised?
- What is the authority or expertise of the individual or group that created the site?
- Is contact information for the author or producer provided?

Adapted from Esther Grassian, UCLA College Library, 5/5/98
http://www.library.ucla.edu/libraries/college/instruct/critical.htm

Integrating/Relating

- A possible end-product
  - Jennifer -- hyperlinking of specific topics
  - Other possible options include partitioning your windows environment, hyperbolic nets,


Netscape: Hyperbolic Tree - The Louvre
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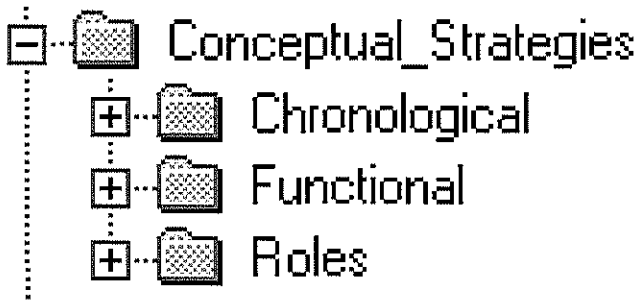
inxight
Web Browser created by Inxight Software using
Hyperbolic Tree for Java.

But…
it's the underlying file structure which is critical



Jones and Thomas Conclusion regarding Personal Information Management Tools

- Less than 20% of their 1996 sample use any computer-based technologies within their personal information management system
- Those who do use some computer-based technologies do not use them exclusively; they also rely on traditional pen and paper methods as well

Frand 1998 observation at Anderson School: Those who have adopted Palm Pilot are abandoning paper and pencil methods

Knowledge management tools are NOT that far behind!

PKM

Personal Knowledge Management

" it is estimated that the amount of information - not knowledge and not unique information - available on the Internet in the year 2001 will be greater than all knowledge in recorded history."

OCLC Knowledge Access Management Institute, 1998

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Where is the Life we have lost in living?
Where is the wisdom we have lost in knowledge?
Where is the knowledge we have lost in information?

Where is the information we have lost in data?

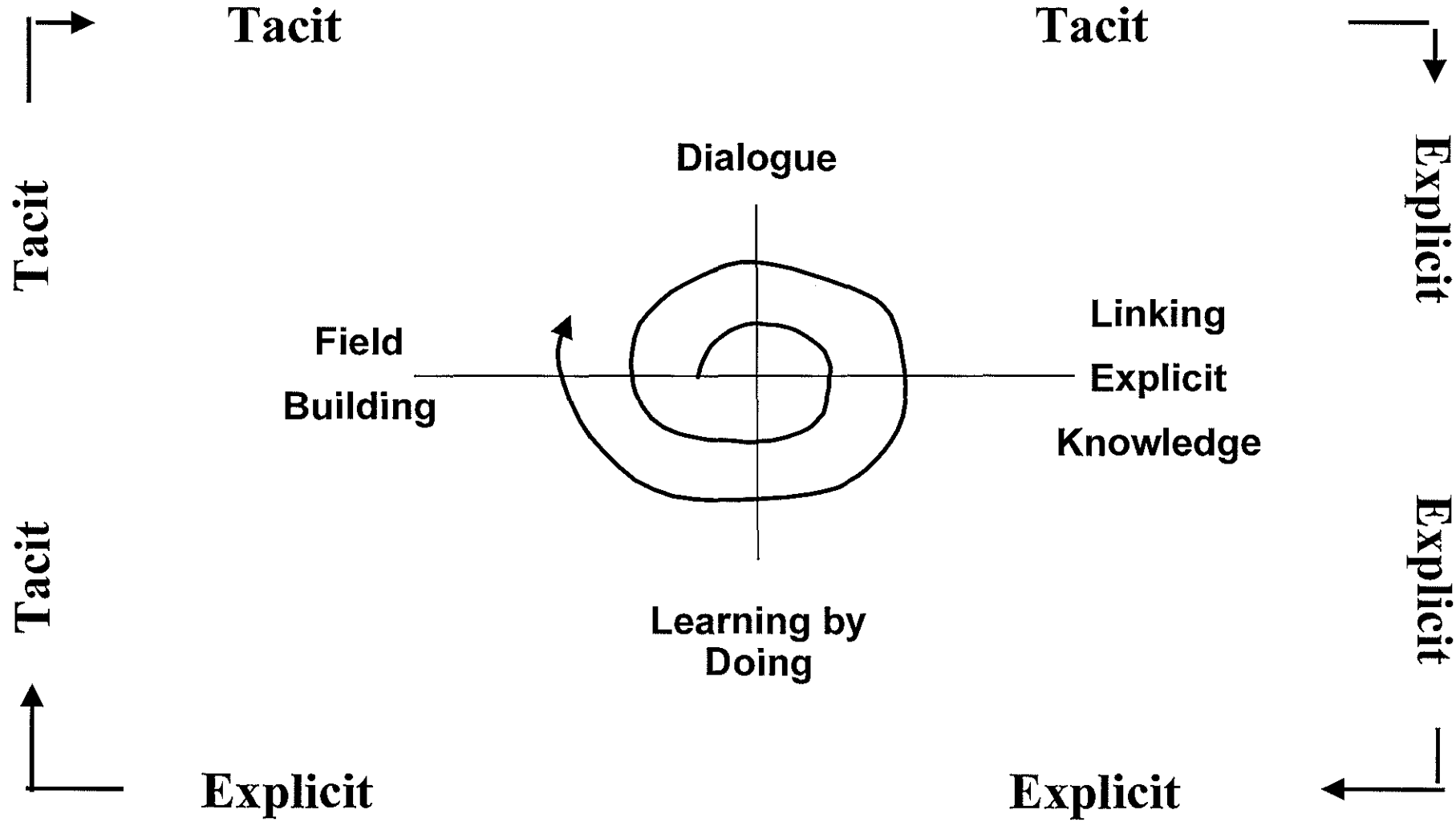
T.S. Eliot, Choruses from "The Rock," I Collected Poems 1909-1919

What is Knowledge?

- **No generally agreed upon definition and lots of confusion**
- **Some attributes**
  - **No law of diminishing returns -- unlimited resource; never run out of "raw" materials**
  - **Knowledge grows from sharing (and giver frequently becomes even more knowledgeable)**
  - **Communication and personal chemistry critical in knowledge processes**

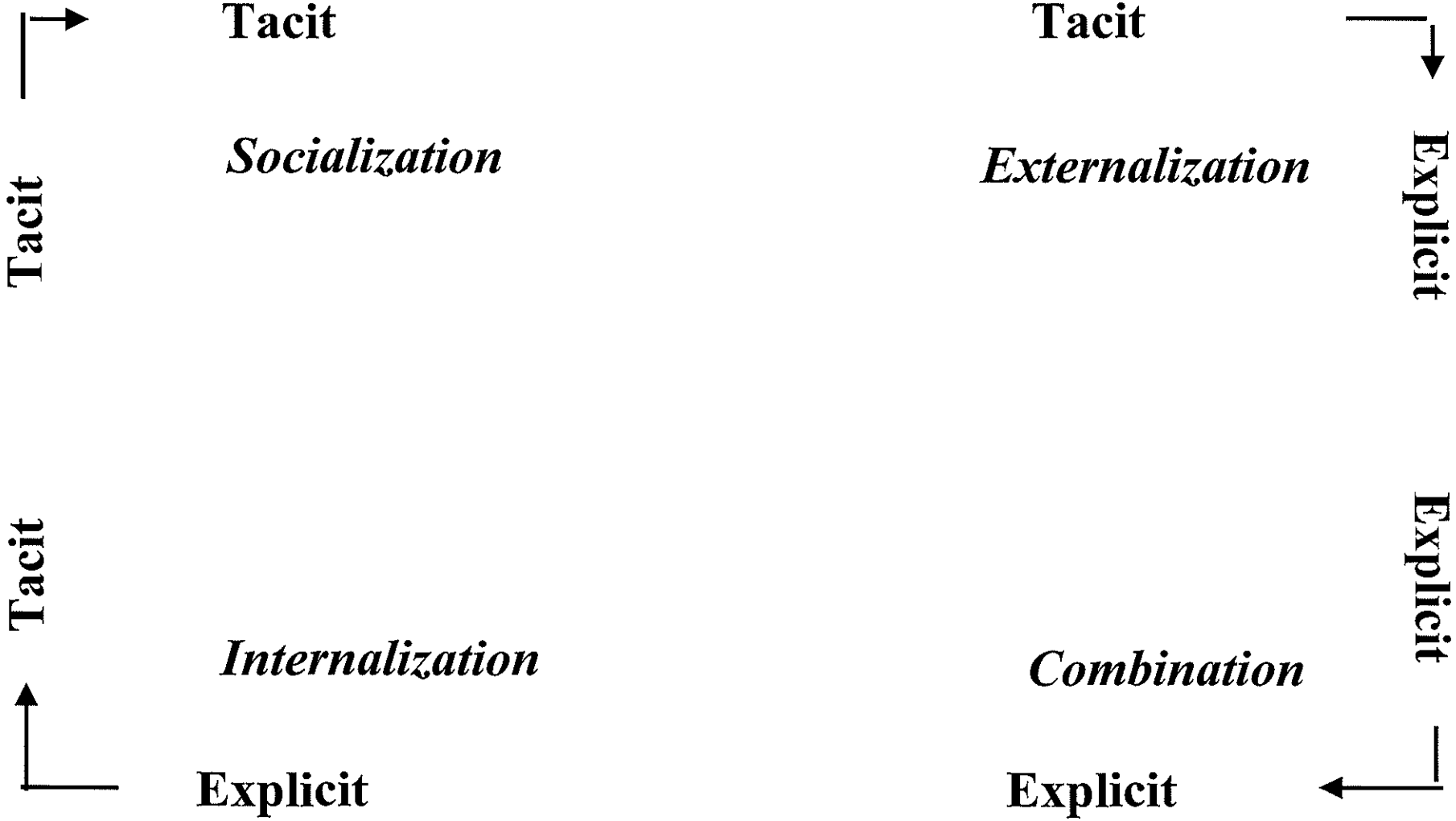
Karl Erik Sveiby, The New Organizational Wealth: Managing & Measuring Knowledge-based Assets, SF: Berrett-Koehler Publishers, Inc.,1997, page 29

Knowledge Spiral



In Nonaka and Takeuchi, The Knowledge-Creating Company 1995, page 71

Knowledge Transfer Process



In Nonaka and Takeuchi, The Knowledge-Creating Company 1995, page 71

If student and teachers continue to approach the educational experience using the same old approaches and techniques,
will investing in information technologies make any difference?

"I call my field knowledge management, but you can't really manage knowledge. What a company can do is manage the environment that optimizes knowledge."

Larry Prusak, Managing Partner IBM
Global Services Consulting, 1998

What, if anything, do faculty and students need to do differently to get value from our investments in information technologies?

One component involves Personal Knowledge Management

Anderson "Edge" Workshop
An Introduction to PKM

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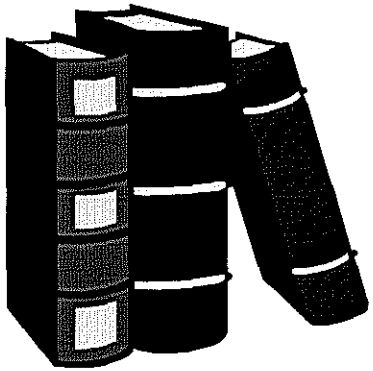
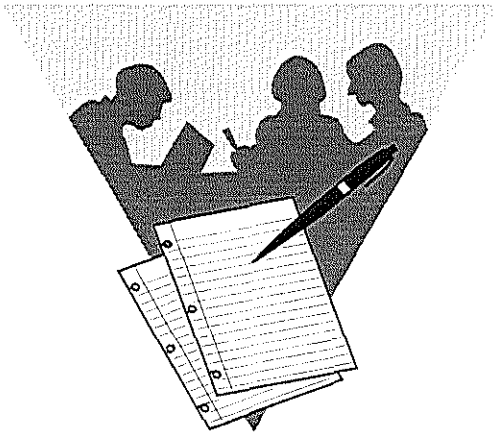
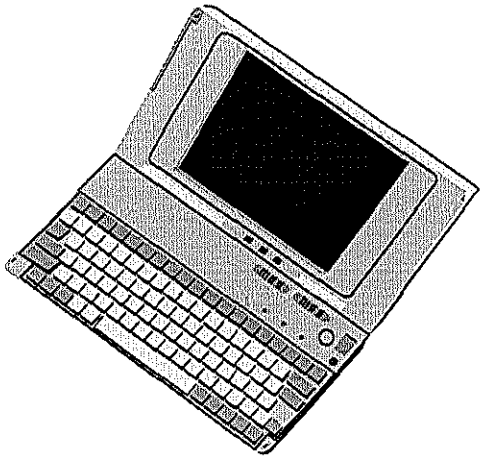
The Anderson Edge I: Managing Information







A Workshop for
Anderson School Students

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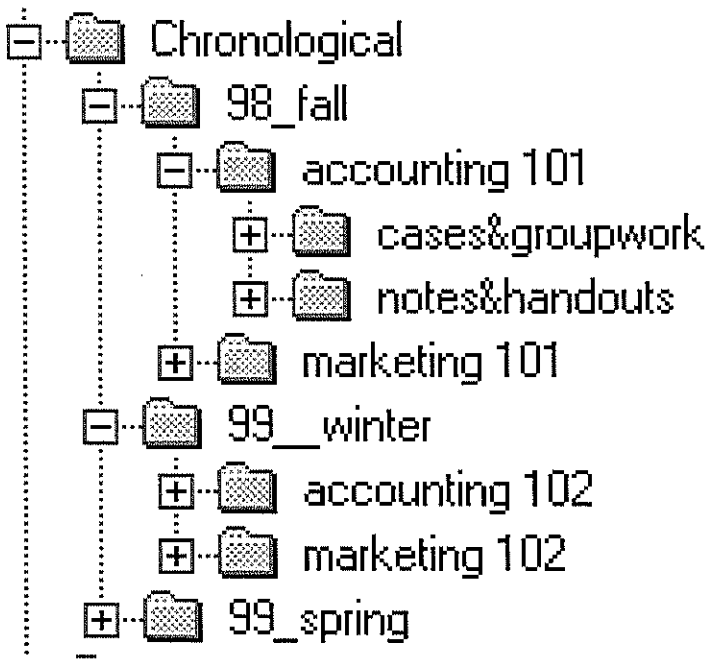
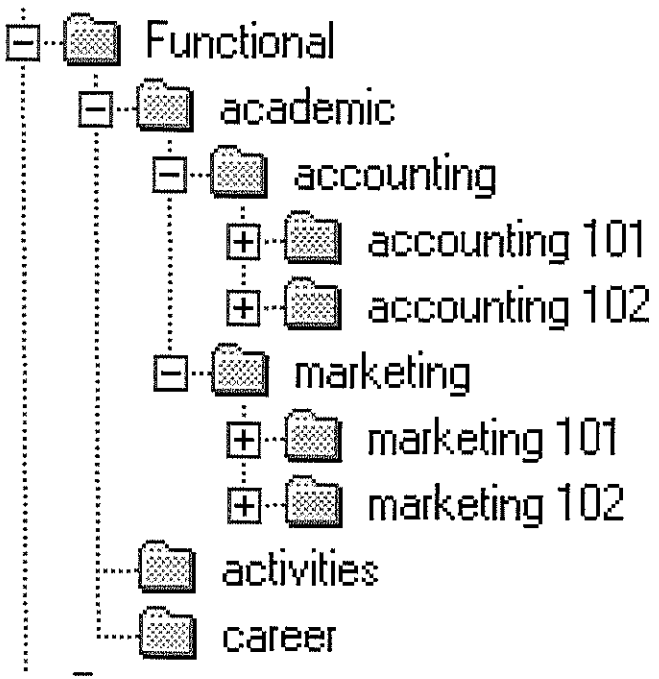
Chronological Organizational Approach "when"



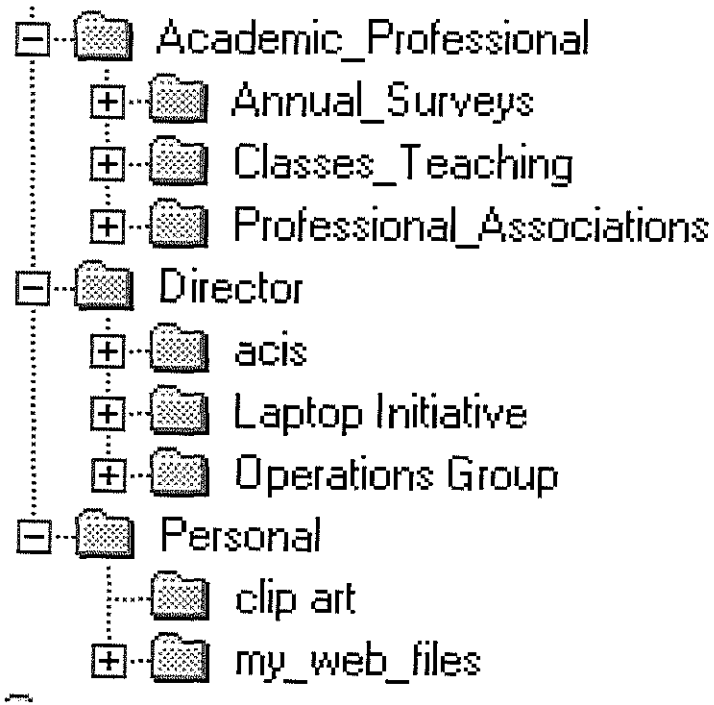
- **Pro:**
  - **very easy to set up and maintain**
  - **works extremely well during the time period**
- **Con:**
  - **does not have good long term search value**
  - **requires that you think in terms of *when* you got the information rather than in terms of what information you *need***

Functional Organizational Approaches "what"



- **Pro:**
  - **brings "like and kind" material together in one category so it is easier to search**
  - **works well for a small number of topics**
- **Con:**
  - **the larger the number of concepts, the more difficult to create and maintain categories**
  - **some concepts or material may cross functional boundaries**

Role Organizational Approaches "how"



- **Pro:**
  - **facilitates searching - - you look for information in terms of the context in which you will use it**
- **Con:**
  - **working out the roles can be very difficult**
  - **roles will change over time, requiring updating and modification of categories**

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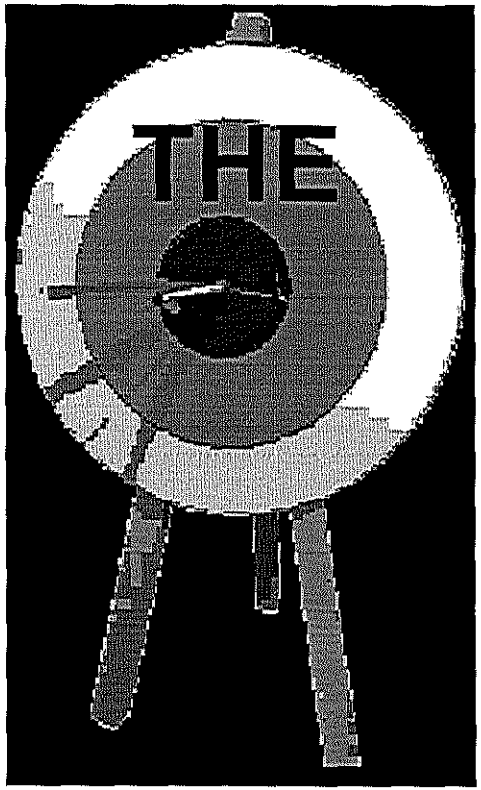
Rate of Introduction of Technology occurred at a faster pace at some schools, but the technology introduced and its use is not different!

Frand, Fifteenth Annual UCLA Survey of Business School Computer Use, 1998

KNOWLEDGE MANAGEMENT



Challenge for the 21st Century