Aims and Objectives

- **Aim**: to build a basic understanding of KM through a range of techniques for utilizing personal and organizational knowledge to achieve organizational effectiveness and efficiency.
- **Objective**: to understand the issues involved in implementing KM systems in an organisational setting.

**Theory/Concepts**
- Reflection-KM Case Studies
- Practice-designing KMS
- KM in Action - Unit Activities

**Lectures**
- Theory Concepts
- Reflection-KM Case Studies
- Practice-designing KMS

**Tutorials**
- Reflection-KM Case Studies
- Practice-designing KMS

**Assignment**
- Reflection-KM Case Studies
- Practice-designing KMS

**Exam**
- Theory Concepts
- Reflection-KM Case Studies
- Practice-designing KMS
Knowledge as action

- Knowledge - (the knowledge of something) is the ability to form a mental model that accurately represents the thing as well as the actions that can be performed on it and by it

- "Knowledge consists of truths and beliefs, perspectives and concepts, judgments and expectations, methodologies and know-how and is possessed by humans, agents, or other active entities and is used to receive information and to recognize and identify; analyse, interpret, and evaluate; synthesize and decide; plan implement, monitor, and adapt – i.e. to act more or less intelligently.

  ... knowledge is used to determine what a specific situation means and how to handle it.

Wiig, 1999

- Information

- Infrastructure

- Technology

- Infrastructure

- Organisational Design

- Sense Making

- Learning

- Memory

- Knowledge Management System (KMS)

KMS - Addressing the KM Dimensions

- Structural Dimensions

- Functional Dimensions

KMS - Supporting Action

- Knowledge

- Information

- Data

- Information Object

- Intention

- Exploration

- Exploitation

- Performance
Changing Work Practices

- To create value through knowledge requires work:
  - to be performed collaboratively
  - to have a task/activity focus
  - to integrate "doing" and "planning"
  - learning from experience
- Work practices have changed from structured operation to knowledge work:
  - the focus is on work practices that require expertise and knowledge to be applied and used to perform activities.
  - the activities need to produce tangible outcomes as well as contributing to the creation of knowledge.
  - work practices combine productive and cognitive work

User Versus Knowledge Workers

<table>
<thead>
<tr>
<th>Attribute</th>
<th>User</th>
<th>Knowledge worker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependence on system</td>
<td>High</td>
<td>Low to nil</td>
</tr>
<tr>
<td>Cooperation</td>
<td>Usually cooperative</td>
<td>Cooperation not required</td>
</tr>
<tr>
<td>Tolerance for ambiguity</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Knowledge of problem</td>
<td>Average/low</td>
<td>High</td>
</tr>
<tr>
<td>Contribution to system</td>
<td>Information</td>
<td>Knowledge/expertise</td>
</tr>
<tr>
<td>System user</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Availability for system builder</td>
<td>Readily available</td>
<td>Not readily available</td>
</tr>
</tbody>
</table>
Communication

- The act of communication involves two agents, and serves the purpose of knowledge externalization, internalization and sharing between those agents.
- Communication is essential to construct collective meaning through a process of transforming personal knowledge
- Shared meaning can be considered as organisational knowledge

SECI Model - Amplification

- 'organisationally amplifying' is a process where individual knowledge permeates the organisation's knowledge network, through 4 expanding levels
  - Individual
  - Group
  - Organisation
  - Inter-organisation

KMS - Addressing Organisational Work

Focus | Object of Work
--- | ---
Organisation | Capability
Group | Collaboration
Individual | Activity
KMS Development as Organisational KW

- KM Team Focus
- Object of Work
- Capability
- Collaboration
- Activity
- KMS Strategy
- KMS Planning
- KMS Development/Implementation
- KMS Operations

KMS - Beyond IS

- KMS are socio-technical systems that can support:
  - knowledge creation
  - knowledge capture, formalisation and preservation
  - knowledge organisation and distribution
  - application and utilisation of knowledge

Traditional IS are not explicitly aimed at supporting all these functions

Linking Business and KM Strategy

- What your company must know
- Strategy-Knowledge Gap
- Knowledge Gap
- What your company can know
- Knowledge-Strategy Gap
- What your company must do
- Strategy Gap
- What your company can do

Tiwana, 2000

Knowledge-Strategy Gap

Strategy-Knowledge Gap
KMS Goals

- Value Adding
  - support work practices that include the cognitive aspects of the activity
  - encourages the reuse of existing materials in knowledge processes
  - making internal knowledge visible and external knowledge accessible;
  - development of human capital (personal skills/knowledge)

- Changing Perspective
  - from data to document
  - from report to meaning
  - from information to knowledge
  - from procedure to knowledge work

- Implementing Organisational Learning

KMS Objectives

- Support for knowledge work
  - must include the productive and cognitive aspects of the activity
  - doing, thinking, communicating

- Address all levels
  - individual, group, enterprise

- Focus on knowledge processes
  - making internal knowledge visible and external knowledge accessible
  - ensure knowledge is deployed
  - emphasis on knowledge production

- development of human capital (personal skills/knowledge)
  - learning
  - sense-making
  - reflection

Aspects of ROI in KM

- Measurable efficiencies in product development, production, sales and service cycles;
- Improved decision-making at the front lines in the development, production, sales and support cycles;
- Better ability to get new partners up to speed quickly;
- Improved business morale because employees are better informed and are making better decisions;
- Increased customer loyalty due to better trust in employees’ expertise

Eric Tsui, 2001
Measuring Knowledge Assets

- Intellectual capital measures and the efficiency of intellectual capital
- Intangible Assets Monitor (Karl-Eric Sveiby);
- Balanced Score Card (Kaplan and Norton)

Exploiting KM

KMS

The KM Infrastructure

Staff

External

Suppliers

Customers

Partners

Management

Internal

A KMS Architecture?

- People
- Process
- KM (Performance
  - Exploration
  - Learning
  - Memory
  - Sense making
- Technology
- Information/Content
Organisational Design: A Historical View

<table>
<thead>
<tr>
<th>Type of Org</th>
<th>Dominant Structure</th>
<th>Advantage</th>
<th>Disadvantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional</td>
<td>Functional division</td>
<td>Expertise under hierarchical control</td>
<td>Functional silos</td>
</tr>
<tr>
<td>Multi-divisional</td>
<td>Business unit</td>
<td>Integrates functional expertise</td>
<td>Boundaries impede learning &amp; knowledge transfer</td>
</tr>
<tr>
<td>Project-based</td>
<td>Project team</td>
<td>Customer focus market agility</td>
<td>Short term focus learning localised</td>
</tr>
<tr>
<td>Knowledge-based</td>
<td>Community of practice</td>
<td>Integrates competencies into the org</td>
<td>Competing priorities</td>
</tr>
</tbody>
</table>

Understanding the Who, Why, What & How

- What is the motivation for change?
  - the business case
  - Why KM?
  - identify the competitive advantage
- How does the KM project fit the organisation?
  - cultural and structural factors
- What is the KM agenda?
  - the functional perspective (eg promote "best practice")
  - Who are the "champions"?
  - find senior business sponsors to support your pilot initiatives
- What is to be done?
  - identify potential 'quick-wins'

Skill Base for KMS

- Technical Competence
  - project management
  - technology awareness
  - application systems implementation
- Business Knowledge
  - corporate needs
  - quality management
  - risk management
  - customer orientation
- Social Competence
  - interpersonal leadership
  - teamwork
  - creativity
  - diagnostic
Knowledge Audit
A structured method for analyzing knowledge resources and needs

<table>
<thead>
<tr>
<th>Ideal State</th>
<th>Recommendations</th>
<th>Gaps to be filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>based on org. strategy</td>
<td>based on org. strategy</td>
<td>based on org. strategy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current Reality</th>
<th>Plans</th>
<th>Actions</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>based on org. strategy</td>
<td>based on org. strategy</td>
<td>based on org. strategy</td>
<td></td>
</tr>
</tbody>
</table>

Knowledge Audit
A structured method for analyzing knowledge resources and needs

Components of the KMS Architecture
- Repositories
  - Store formal and informal (explicit) knowledge
  - Provides organisational knowledge assets, (information resources, knowledge-based products and organisational records) that are identifiable, reliable, authentic and flexible (e.g. Lotus Notes, intranets, Grapevine)
  - Categorising and contextualising knowledge based on a shared understanding of contexts and a common terminology

- Collaborative platforms
  - Support communication, co-ordination and knowledge sharing
  - Manage the work process (e.g. workflow) and model work practices with intelligent technologies
  - Support for sense making, learning and memory (functional dimension)
  - To transform personal knowledge into organisational knowledge

- Networks
  - Physical and logical channels for communication

Nothing can be done if organisational culture is not supportive of KM!
Lecture 12
IMS3012 - Semester 2, 2005

ICT for Knowledge Management

- Creativity Tools
- Document Management
- Data Warehouses
- Data Mining

- Enterprise Modelling
- Editorial Systems
- Workflow Mgt.

- OLAP
- Intra-/Internet-Standards
- User Modelling
- Content Management

- Text Mining
- Case Based Reasoning
- Search Engines

Role of Intelligent Technology

- Modeling expertise
  - Expert systems approach ("objectified" knowledge "canned" in a computerised system)
  - Solving problems by analogy
  - Case Based Reasoning (CBR) approach
  - Simulating problem solving
  - Neural Networks
  - Dealing with ambiguity
  - Fuzzy logic
  - Deriving rules from data
  - Machine learning
  - Evolving solutions
  - Genetic algorithms
  - Search
  - Intelligent agents

KMS as Change Management

- Implementing
  - Organisational (re)structure
  - Socio-cultural change
  - Technological tools and techniques
  - Revised work practices
  - Recalibrated reward systems

KMS deployment is about change management
The change management process: Unlearning & Relearning

- The change management process (Kurt Lewin & Edgar Schein)
  - Un-freezing
    - Establishing a need for change for those affected by the change.
    - Removing the threat/perception of risk in the change.
    - Introducing a climate conducive to change.
  - Moving or Implementing
    - Training/‘skilling’ those affected by the change.
    - Fostering positive attitudes towards the change.
  - Re-freezing
    - Reinforcing and institutionalising the change
    - Re-establishing stability
    - Integrated the change into the organisation’s overall operations.
    - Diffusing the change throughout the organisation’s social system.

Risk and Opportunity

- Risk is:
  - the possibility of loss, injury, disadvantage or destruction as a consequence of the uncertainty associated with pursuing a course of action
  - not always negative
  - necessary for progress as it is essential to exploiting opportunities
  - a key component of learning as it represents the potential for failure
- Need to balance the negative consequences of risk with the potential benefits of its associated opportunity

Risk Management

- Risk Management is:
  - a discipline that enables people and organizations to cope with uncertainty by taking steps to protect vital assets and resources
  - a framework for identifying risks and deciding what to do about them
  - weighing (assessing) situations and making decisions about which risks need immediate attention
  - a process that needs to be integrated into organizational management
- Most organisations believe that "... good business is all about risk, business growth cannot occur without introducing new risks [and] business objectives cannot be achieved without placing assets at risk [while] business rivalries cannot be won without out-risk-taking the competition ..." - Chapman, 2001
Examples of RM: SEI RM Paradigm

- **Identify**: search for & locate risk before it is a problem
- **Analyze**: transform risk into decision making info, evaluate impact, probability, timelines, classify and prioritize
- **Plan**: translate risk info into decisions and actions and implement actions
- **Track**: monitor risk indicators and mitigating actions
- **Control**: correct deviations from plans
- **Communicate**: provide info and feedback, internally and externally, on all aspects of the risk program


The Paradox of KM

- **Knowledge**: what you want to distribute, is not what is distributed
- **Learning**: knowledge is increased as a result of its sharing and distribution
  - learning facilitates change by adapting memory artefacts to the current situation; it is the capability to re-reconstruct knowledge (memory) using a shared understanding of the new context.
  - learning implies constant innovation but culture is a stabilising force
  - forces for conformity and stability severely limit learning
  - most learning in organisations tends to be lower-level (fixing the problem) but dynamic, complex environments demand higher-level learning (changing practices)