Knowledge management and e-Learning

Tu-Bao Ho
Head of Knowledge Creating Methodology Lab
School of Knowledge Science
Japan Advanced Institute of Science and Technology

Content

➤ About concepts of knowledge management and e-learning

➤ Relation between knowledge management and e-learning
Technology creation based on knowledge science

- System methodology
- Complex systems analysis
- Creative support systems
- Decision-making processes

- Knowledge management
- R&D processes
- Social systems
- Socio-technical systems

- Knowledge creating methodology
- Knowledge-based systems
- Genetic knowledge systems
- Molecular knowledge systems
Verifiable and evolvable e-society

Can you trust e-society infrastructure information system and leave your life to it?

“Knowing ignorance is strength; ignoring knowledge is sickness”

Lao Tzu (老子)
What is knowledge?

No single definition on which scholars agree, continued debate about the nature of knowledge.

» **Understanding** gained through experience, observation or learning.

» Knowledge is **what is known** (confident understanding of a subject, potentially with the ability to use it for a specific purpose).

Where knowledge can reside?

- **Human mind**
- **Document**
- **Organization**
- **Computer & Internet**
Two types of knowledge

**Tacit knowledge (subjective)**
Knowledge which is only known to you and hard to share with someone else (*people’s head*).

- Cognitive dimension
  - Beliefs
  - Mental models
  - Perceptions
  - Schemata

- Technical dimension
  - Informal skills
  - Crafts (know-how)

**Explicit knowledge (objective)**
Knowledge that can be codified, articulated, and easy to share or communicate (*media*).

- Theoretical approaches
- Problem solving
- Documents
- Data bases
- Knowledge bases

Polanyi (1966), “We can know more than we can tell”

Management

The act of providing direction to people and/or organizations
Knowledge management is a new emerging trend in business with different definitions.

**What is knowledge management?**

Knowledge management as I use it here is not a software product or a software category. Knowledge management doesn’t even start with technology. It starts with **business objectives** and processes and a recognition of the need to share information.

Knowledge management is nothing more than managing information flow, getting the right information to the people who need it so that they can act on it quickly. (Bill Gate)
What is knowledge management?

- Simply, it is management of knowledge.
- Management of organizational knowledge for creating business value and generating a competitive advantage.
- “Knowledge management is leveraging relevant intellectual assets to enhance organizational performance.” (Stankosky, 2002)
- “A conscious strategy of getting the right knowledge to the right people at the right time and helping people share and put information into action in ways that strive to improve organizational performance”. (O’Dell & Grayson, 1998)

“I involv...
What is knowledge management?

**Knowledge management:** processes of *creating, capturing, and using knowledge to enhance organizational performance.*

(Stacey, 2000)
Theory of knowledge creation
Depends on view of knowledge

The organization as a “machine” for information processing is based on Cartesian duality – mind and body, subject and object – and the Western tradition of knowledge as rational thinking.

The organization based on the Japanese tradition – body and spirit work together through the whole personality – the Zen tradition is tactile and interpersonal.

Why Japanese companies succeed?

- Japanese companies existed in an environment in which the only certainty was uncertainty.
- Japanese companies struggled against international competition with dogged determination → a new technology, a new product design, new production process, a new marketing approach, etc.
- Knowledge accumulated from outside is shared within the organization, stored as part of company knowledge, used for new technologies and products.

Knowledge creation → Continuous innovation → Competitive advantage
Making tacit knowledge explicit

- 1978: Honda wanted the development of a new-concept car with the slogan “Let’s gamble” → formed a team of young engineers and designers (the average age was 27).

- Only two instructions: (1) a product concept fundamentally different from anything the company had ever done before; (2) to make a car that was inexpensive but not cheap → provide an extremely clear sense of direction.

- Ambitious challenge “Automobile revolution” with question: “If the automobile was an organism, how should it evolve?”

- Answer: “man-maximum, machine minimum” → ideal car should somewhat transcend the traditional human-machine relationship → car simultaneously “short” and “tall”, lighter, cheaper, more comfortable, more solid → “Tall boy” car.

Four modes of knowledge conversion

By social contact or sharing experience among members

By shared mental models or technical know-how, etc.

Translating individual insights into rules, recipes, formulas, procedures, etc. which can be widely disseminated

Combining different bodies of explicit knowledge by documents, meetings, conversations, etc.

The Spiral of Knowledge Creation
Components of knowledge management

**Ba**: Place for knowledge conversion
- Platform for knowledge conversion
- Space for self-transcendence
- Multi-context place

**SECI**: Process of knowledge conversion
- Conversion between tacit/explicit knowledge

**Quality and Energy**
- Input
- Output
- Moderate

- Grow and shift through the continuous knowledge conversion process
- Moderate how ba performs as a platform for SECI

**Intellectual capital**: Basis of knowledge creation

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Ba – shared place for knowledge creation

- The word "Ba" is a Japanese term which roughly translates into the English word "place".

- Ba is a place where one shares a context with others to create meanings. Participants understand the contexts of others and oneself, and through interaction, change the contexts.

- Ba may be:
  - Real: Office, distributed working spaces, brainstorming rooms, etc.
  - Virtual: Email, teleconferences
  - Spirit: Sharing experience, ideas, etc,
Ba – shared place for knowledge creation

Common place for people to get information and share their ideas, opinion, etc.

On-screen keyboard and e-learning
### Knowledge management in APEC economies

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<td>Australia</td>
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### Learning related issues

- Knowledge worker
- Life-long learning
- Learning organization
- e-Learning
You know you’re a knowledge worker if ...

- 80% of your time is spent doing things that “aren’t your job“.
- Your mother doesn't understand what you do.
- Your boss doesn't understand what you do.
- You don't understand what you do.

- who works primarily with information or develops and uses knowledge in the workplace
- Need learning to gain knowledge

What is exactly a “knowledge worker”, and do we have any on staff?

Life-long learning

- It's never too soon or too late for learning.
- Often accomplished through distance learning or e-learning, continuing education, home-schooling or correspondence courses.
- The knowledge and skills acquired in primary, secondary and university education are usually not sufficient for a professional career spanning three or four decades.
What is a learning organization?

- “Organization where people continually expand their capacity to create the result they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how learn together” (Senge, 1990)

- Learning organization can mean an organization which learns and/or an organization which encourages learning in its people. It should mean both.” (Robin, 1998)

Learning and e-Learning

- **Learning** is the process of gaining knowledge through study and experience.

- **e-Learning** means the use of new multimedia technologies and the internet to improve the quality of learning (European Communities, 2004).

- We do know the "e" doesn't stand for "electronic". The "e" in e-Learning would be better defined as Evolving or Everywhere or Enhanced or Extended.

- e-Learning = learning environment supported by continuously evolving, collaborative processes focused on increasing individual and organizational performance.
e-Learning and traditional classroom

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<tr>
<th>Classroom</th>
<th>Physical, time and location dependent</th>
<th>Unlimited, anywhere, anytime</th>
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<tbody>
<tr>
<td>Content</td>
<td>Textbook</td>
<td>Simple text, audio, animation, video, printed and online resources, collaboration</td>
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<td>Video</td>
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<td>Projector slides</td>
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<tr>
<td>Personalization</td>
<td>One learning path</td>
<td>Place and path determined by learner</td>
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**e-Learning is and is not**

**e-Learning is**
- Non-linear
- Dynamic process
- Learner controlled
- Reusable objects
- Informal
- Platform independent
- Communities of Internet
- etc.

**e-Learning is not**
- Linear
- Static event
- Instructor controlled
- Non-reusable objects
- Formal
- Standard
- Functional or department
- etc.
e-Learning to knowledge management

- e-learning could be a cornerstone of knowledge management (organization learning, life-long learning).
- e-learning provides a good environment for people in organizations to learn: everywhere, dynamics, non-linear, informal (virtual “ba”).
- e-learning supports sharing knowledge among people and converting tacit to explicit knowledge: wiki, blogs, communication, etc.
Knowledge management to e-learning

- The need of knowledge management in organization offers opportunities and challenges to e-learning (content, methods, effectiveness).

- Knowledge management tools can support the development of open courses and open sources in e-learning.

Challenges for e-learning

- Which content of e-learning should be done to meet the need of knowledge management?

- How open courses and open sources contribute to the development of e-learning?
Conclusions

- “Knowledge sharing is power”.
- Knowledge management is crucial for APEC member economies.
- Strong relation between knowledge management and e-learning.

*Darwin: It’s not the strongest, nor the most intelligent, but the species most adaptable to change has the best chance of survival.*

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The knowledge-creating company

- Xerox Distinguished Professor, foundation Dean of the School of Knowledge Science, Japan Advanced Institute of Science and Technology.
- Author of the knowledge creation theory that explained the successes of Japanese companies are based on their success of knowledge management.
- Extended the concepts of explicit and tacit knowledge, as well as theory about the conversion between them.
- “the best book of the year in business and management in 1996” → how Japanese companies create the dynamics in innovation?