Knowledge Management Basic Approaches and Definitions

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Knowledge Management (KM)

- What does knowledge mean?
- What is Knowledge Management ?
- Different aspects of managing knowledge
- KM in action: How, with which tools, what for ?

Knowledge, a very special asset

Manage what ?

Knowledge

Data?

Information?

- **Data** : facts
  alone and in the abstract does not provide information.
- **Information**, in general terms, is data plus conceptual commitments and interpretations.

What does "knowledge" mean ?

According to R. Ackoff
content of the human mind can be classified into categories

Data: raw, facts, symbols (usable or not)

Information: data that are processed to be useful; provides answers to "who", "what", "where", and "when" questions

Knowledge: application of data and information; answers "how" questions

From data to knowledge

- Understanding relations (INFORMATION)
  What, who, when, where
- Understanding patterns (KNOWLEDGE)
  strategy, practice, method, or approach (how)
  .
- Understanding principles (WISDOM)
  embodies principle, insight, moral, or archetype (why)

Knowledge is information that changes something or somebody – either by becoming grounds for actions, or by making an individual (or an institution) capable of different or more effective action.

To have the Knowledge is to have the

Capacity to understand and give a meaning to information and facts

Two more categories ? (Ackoff)

Understanding: appreciation of "why"
Wisdom: evaluated understanding

Are there different types of knowledge ?

Is knowledge always structured, easily reachable?

If I have the recipe, am I sure that I will make a good Tiramisu?

The written recipe is just the tip of the iceberg,
EXPLICIT KNOWLEDGE

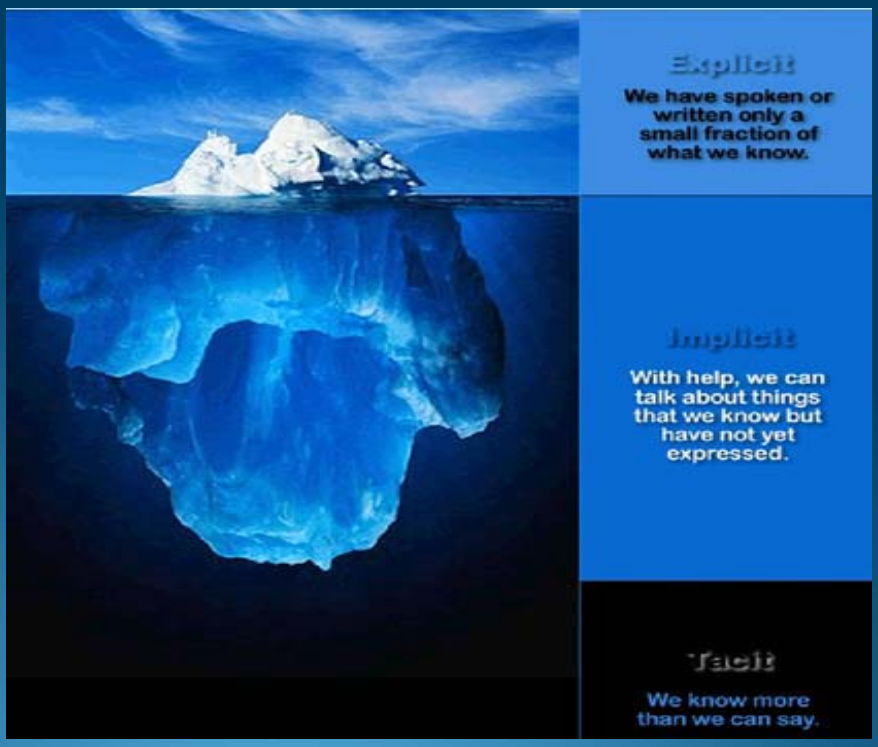
(Polanyi)

Explicit,

Implicit

and Tacit

knowledge



Talking about knowledge.
Other categories you will hear about

Structured knowledge
(document, data base, minutes of a meeting…)

Unstructured knowledge
(telephone calls, scattered notes, informal discussions)

Critical knowledge: Key knowledge for a given business, eventually at risk

Why did knowledge and KM became important ?

Economists in early 60's (Solow):

increasing in productivity was not fully described by a formula including traditional factors (land, capital and labour)

There was something else to be taken into account

Knowledge

Innovation

KNOWLEDGE IS AN ASSET

Competitiveness depends on innovation

Innovation depends on knowledge

The technological revolution of the last 40 years has established knowledge as a key issue.

Concept of **"Knowledge Society"** has arisen:

It refers to any society where knowledge is the primary production resource, not any more land, capital and labor.

A Knowledge society "creates, shares and uses knowledge for the prosperity and well-being of its people".

KNOWLEDGE, A SPECIAL ASSET

Does not diminish if you use it or share it

Information has a shelf life, skills/experience improve knowledge

Knowledge may become lost when not put into practice

Knowledge is no knowledge if you cannot retrieve it

Alive knowledge is the currency for innovation and sustainability

Knowledge management

Knowledge management

Hirotaka Takeuchi, Ikujiro Nonaka

1985 The New Product Development Game

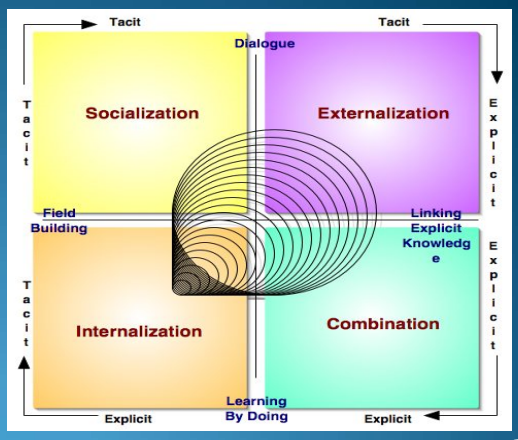
1995 The Knowledge-Creating Company

How Japanese Companies Create the Dynamics of Innovation

Knowledge and expertise is constructed
in many different ways (spiral, social process)

We learn from:

- information
- interaction
- collaborative activities
- experience



Knowledge management

Knowledge Management Definitions

- '*…the processes that governs the creation, dissemination, and utilization of knowledge...*' (Newman, 1992)
- '*...managing the organization's knowledge by creating, structuring, dissemination and applying it to enhance organizational performance...*' (O'Leary, 1998)
- '*…process to acquire, organize, and communicate knowledge of employees so others may be more effective in their work…*' (Alavi and Leidner,1999)

'*…process to acquire, organize, and communicate Knowledge* (Andriessen, 2004)

It's all about

CREATE, CAPTURE, PRESERVE, TRANSFER, DISSEMINATE, UTILIZE

Knowledge management

IAEA definition:

"**systematic and integral approximation** which permits to **identify, manage and share** the knowledge within an organization, and to **interconnect people** to create new collective knowledge useful to the objectives of the group"

Knowledge management. Results?

'...Knowledge management enables the creation, distribution, and exploitation of knowledge to **create and retain greater value from core business competencies**"

HSK, Switzerland Nuclear Safety Inspectorate

Are Knowledge and KM sufficient?

Knowledge

the capacity for effective action

Competence

Knowledge + Skills + Attitude

Human resources development : the other side of the coin

- ✓ Allows to accelerate the processes of learning
- ✓ Makes diffusion of knowledge a more horizontal process
- ✓ Gives the people greater sense of value
- ✓ Increases the value of the entire organization, beyond the individual interests

Different aspects of managing knowledge

There are different ways of analyzing KM as a process
but mainly two principal trends.

One, more techno-centered

the other **one more holistic, integral, organizational**, which makes a use of knowledge as a multidimensional concept

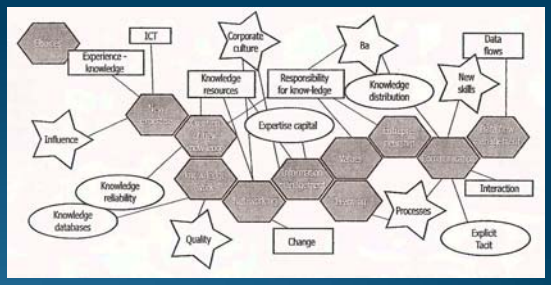
It focus is people and organizations development

It is an approach with more social, political, philosophical contents

Stresses innovation as a process, requiring cultural changes, changes in mind and attitude, construction of a common vision, team learning

Both views are **complementary visions of the same body**

It is not simple ! Many inputs, actors, stakeholders, processes, variables, expected results



Involves

- **Knowledge**
- **People**
- **Technology**
- **Processes**

Main elements

KM Policy and Strategy

Human Resources Development P+S

Methods, Procedures & Documentation

Technical (IT) Solutions

Approaches to Capture/Use Tacit K

KMK Culture / Supporting environment

KM in action: What, how, with which tools, what for ?

What for ?

Promotes creating new knowledge and innovation
Reduce costs of being effective and increases innovation
Preserve existing knowledge
Reduce the K-loss from employees who leave
Increase collaboration and K-sharing to enhance skills
Increase productivity by making knowledge accessible
Enables a "pro-active learning and decision culture"
Helps staff do the right things, and do them right

Knowledge management system

Integrated to System Management

Ideally KMS is an integrated and coordinated approach to affect the management of knowledge and is manifested in a variety of implementations including document repositories, expert databases, work processes, etc.

KM Policies and strategies

- ✓ **Written policies** for implementing KM strategy
- ✓ KM policy **integrated into management system**
- ✓ **Communication** strategy
- ✓ Identification of KM **responsibilities**
- ✓ **Managers are personally involved** in the KM programme
- ✓ Organization's strategic focus supports a **learning**

Human resources development planning and processes

- ✓ **Workforce planning** – comprehensive workforce planning methodology
- ✓ **Succession** planning
- ✓ Risk assessment for **critical knowledge loss**
- ✓ **Employee development** plans for KM
- ✓ Job profiles or equivalent to **assess and monitor skills/competency**
- ✓ **Supportive learning environment**

Education, Training, Performance improvement

- Coaching and mentoring
- Systematic Approach to Training
- Simulator use
- e-learning, continuous education
- Refresher training
- Human Performance Improvement

Methods, procedures, documentation

Processes for Continual Improving KM

- Learning from Operating Experience
- Work control methods
- Error prevention
- Document control/Configuration procedures
- Corrective action programme
- Benchmarking

Technical Solutions, tools

- Knowledge data bases
- Content/document management systems
- Search engines
- Portals/Intranet
- Wikis/blogs
- Skill/competency databases
- Expert yellow pages
- Communities of practice

Approaches to capture / use tacit knowledge

- Taxonomies development
- Process for critical knowledge Identification
- Processes for knowledge harvesting
- Concept mapping
- Communities of Practice (COPs)
- Coaching & mentoring
- Difusion , transference, utilization of captured knowledge

KM culture

- Culture that promotes knowledge sharing
- No blame environment
  reporting incidents/events and sharing from lessons learned
- Sharing knowledge methods and tools
- Leadership / commitment

KM Performance assessment

- To evaluate existing knowledge management practices
- Determine areas in need of improvement
- Provide feedback needed for improvement
- Ensure KM supports informed decision making (all levels)
- Ensure KM objectives aligned with strategy
- To communicate management goals or priorities
- To promote and motivate desired behaviour of employees (motivate knowledge sharing etc.)
- To stimulate learning and innovation

How to implement ?

We must have leaders convinced and committed

It involves much more than using TIC's to preserve and to spread information

Requires hybrid solutions that involve people and technology

In the nuclear field there is a community of organizations and people willing to help and share

Some steps and tools

Identify your critical knowledge areas. Not all knowledge deserves to be captured and transferred

Capture: Interviews, videos, seminars, story telling, documents.

Work on developing a culture of knowledge sharing

Preservation: documents, portals, IT, videos

Transfer: mentoring, work teams, fellowships, portals, seminars, communities of practice, rotation of personnel

Final remarks

- KM is difficult and challenging
- Recognized as an important driver for better performance
- KM can make an organization more proactive
- Leadership and culture are important catalysts (trust,
- ownership, commitment, empowerment, rewards etc.)
- KM initiatives need to be aligned to support the "best
- practices" already being performed
- An integrated approach to KM is needed
- A performance assessment system needed

One size does not fit all

- ✓KM is not an universal science
- ✓It refers to people
- ✓It depends on prevailing culture and values
- ✓What is good for a given organization/country mat not work in others.
- ✓Implement step by step, and allow learning from experience

Thank you very much !

http://www.iaea.org/inisnkm

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