Knowledge Management

What is it & how should be applied in a business and in an academic context?
An empirical study from Greece.

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Knowledge Economy

- What it is new about the so-called knowledge economy ?
- 1990: Stock value of Microsoft (14.000 personnel) was larger to IBM (300.000 personnel)
- 1999: The ratio of the stock value to the accounting value of the 50 best companies of Business week were 12!
- Researchers propose that when an employee leave, 70% of their knowledge leaves with them
- Employees spend 30% to 40% of their time looking for information
- Redeveloping already existed information costs 5.500 $ per employee

Knowledge Economy

Knowledge:

attracted the interest of ancient Greek philosophers

But

only during the last decades that is the chief ingredient of what we buy and sell and the raw material of our work has attracted the interest of several scientific disciplines

like

Strategic Management, Innovation Management, Change Management, Human Resources Management as well as of Information Technology.

Defining the K.M framework

Data-Information and Knowledge are not the same

- Data relates to transmission
- Information relates to description
- Knowledge relates to decision making and act

Knowledge is always and will always be directly associated with the human factor.

Defining the K.M framework

Knowledge mainly exists in **2 forms** in an organisational contexts:

- **Explicit Knowledge**: More systematic knowledge, embedded into business process, systems. It is easily expressed with texts, figures and normally it is easily managed by IT systems.
- **Tacit Knowledge:** A deeply personal knowledge that coexists with cultural and personal values (it is context-specific), it is not easily recognized and it is built after many years of working experience. As M. Polanyi has said: ***We know more than we can tell.***

Defining the K.M framework

Other crucial qualities of Knowledge

- While it needs time to be accumulated, sometimes it flows **rapidly**.
- Contrary to other production factors like machines, knowledge increases it's value **as much as it is used.**
- While it can be acquired in any place, any time, from anyone, in most cases it is created from specific persons or teams, in a specific place and for specific purposes.

Defining the K.M framework

4 Knowledge Management processes

- **Knowledge Capturing**

Begins from recruitment up to training & acquisitions
R&D subcontracting (intention plays important role)
Might be a by-product

- **Knowledge Codification**

Knowledge must be represented in a functional code
In & out of organisation
Knowledge Maps provide a clear view of the knowledge capital

- **Knowledge Transfer**

Social interaction-Common language/place are required
Accessibility is not enough
Balance must be kept between quality & time

Defining the K.M framework

4 Knowledge Management processes

- **Knowledge Creation** Nonaka & Takeuchi, 1994: SECI model

Socialization: transfers tacit knowledge from one person to tacit knowledge in another person. Language is not necessary but a specific context with shared emotions and experiences is required.

How a Bread making process can be imitated?

Externalization: making tacit knowledge explicit among individuals within a group. Writing articulates tacit to explicit knowledge. **Example**:Having a vision but giving easily-understood orders.

Combination refers to the knowledge creation once knowledge is explicit. Individuals exchange through documents, telephone conversations, etc -Formal education (an MBA is a good example). Middle management plays important role.

Internalization: Understanding and absorbing explicit knowledge into tacit knowledge held by the individual. Documentation helps individuals internalize what they experienced. **Example**: CRM systems

How K.M is applied?

Step 1: Definition of the organizational aims

Step 2: Identification of knowledge gaps and future knowledge needs (Knowledge Audit)

Step 3: Creation of a knowledge map (I.T can give many solutions)

Step 4: Implementation of a culture change program

K.M in academic context

Step 1: Definition of the organizational aims

Who are the interest parties to define the aims?

Analysis of the current external & internal environment:

External: Social-Economic-Technological-Legal-Political (opportunities and threats)

Internal: What are the university's strengths and weaknesses

Step 2: Identification of knowledge gaps

Scientific gaps in terms of: Infrastructure-libraries-mismatch with industry needs? Review of courses/syllabus-Research funding

Step 3: Creation of a knowledge map

University portals connecting student and staff community-virtual class rooms-discussion groups-Who knows what repositories

Step 4: Implementation of a culture change program

Review university regulations (a difficult step for academic contexts)

The «cultural challenge» in K.M

Some paradoxes with K.M:

We train our employees	… but	we don't let them use their knowledge
We learn mostly in projects	… but	we don't pass on our expertise
We have an expert for every question	… but	few people know how to locate him/her
We document everything thoroughly	… but	we cannot easily access our knowledge store
We recruit only the brightest	… but	after three years we lose them too our competitors
We know everything about our competitors	… but	not much about ourselves
We ask everyone to share their knowledge	… but	we keep our own secrets

The «cultural challenge» in K.M

Main problems and ways to overcome:

Lack of trust	Build relationships and trust through face to face meetings
Different cultures, vocabularies, frames of reference	Create common ground through education, discussion, publications, teaming, job rotation
Lack of time and meeting places, narrow idea of productive work	Establish times and places fro knowledge transfers: talk rooms, conference reports
Status and rewards go to knowledge owners	Evaluate performance and provide incentives based on knowledge sharing
Lack of absorptive capacity in recipients	Educate employees for flexibility, provide time for learning, hire for openness to ideas
No time to share	Capturing and sharing knowledge needs to be seen as **part of the job**, not an add-on
Knowledge is power	Help people realise that sharing knowledge increases collective power, and that accessing the knowledge of others makes you more effective

K.M in Business context

- Benefits for companies

Increases the innovation rate (result of knowledge implementation)

Improves the quality and duration of the decision making process

Reduces information searches and the cost of various functions

Helps to understand customers better, serve them efficiently

Increases the quality, productivity and profitability

Helps develop and retain employees & partners and maximizes their collective mind power

K.M in Academic context

- Benefits for Educational Institutions

Brings together professors, students and alumni across campuses and enables collaboration for effective knowledge sharing

Helps transform the educational institutions into connected "knowledge centers" and expand the campus

Strengthens the synergies among several research teams and various departments to increase their efficiency

Improves students' self-sufficiency, confidence level and learning potential by improving the quality of learning programs

Saves public money and taxes as most universities are public funded

An empirical study from Greece

Study profile:

- Funding from the Greek Ministry of Development, Project: DI.ORGANO.SI aiming to develop a prototype K.M system
- **Period of study**: February to March, 2005
- **Sample**: 187 respondents from private and public sector
- Questionnaire including 25 Likert-type questions (5-scale) and more that 88 statistical variables

Aims of the study:

- To record the personal stances and opinions of Greek workers/employees about K.M
- To evaluate several crucial K.M factors in the Greek context

Methodology of data analysis

Framework of questions/answers

Question: To what extend do you believe that… or in your organisation the following process happens/exist …?

Answer: (the respondent selects only one possible answer)

Not at all	Little	Average	Much	Very much
1	2	3	4	5

Statistical tests of Means difference

- Non parametric tests of Kruskal Wallis (more than 2 groups) and Mann-Witney-U (2 groups). These tests are used when we don't know or cannot make any hypothesis that a well known such as the normal distribution exists for the variables under study.

Main Conclusions

- **Men seem to have better awareness of the term K.M than women**

M Men: 3,3

M Woman: 2,96

Test: Kruskal Wallis Non parametric test. P Value=0.07 (Chi Square Statistic: 3,28)

- **The sample didn't make any difference between tacit and explicit knowledge regarding its contribution to the creation of business value. Before the question we had given the definitions of both knowledge types.**

M of Tacit: 4,34

M of Explicit: 4,31

Main Conclusions

- **To what extend interviewed people would change their opinion in case effective K.M tools were existed?**

M: 3.84

Quite positive answer!

- **How the interviewed people rated the main problems for tacit knowledge transfer**?

1) **Resistance from experienced executives due to knowledge "decentralization"**
2) **Lack of time for meetings**
3) The bureaucratic way Greek companies have been organised
4) Difficulties to understand what K.M is

Main Conclusions

- **To what extend people think that K.M would create subversive changes in organizational culture?**

M: 3,72

- There was a statistically significant difference among people from **public** (M:3,87) and from **private** sector (M:3,1). The former agreed with this statement to a larger extend than the latter.

- **What people believe about these changes?**
- In relation to the above question, the majority of people believe that these changes would be **both necessary and positive**. Added to that, people from bigger companies (151+) believe to larger extent that these changes are necessary and positive compared to people from small companies (1-7)

Main Conclusions

- **How interviewed people rated the following crucial success factors for a K.M policy implementation?**

1. **Top management commitment (M: 1,86)**
2. **All managers (M: 2,72)**
3. **All employees (M: 3.26)**
4. Human Recourses Department (M: 3,88)
5. Information Technology Department (M: 3,9)
6. External consultants (M: 4,88)

- **Statistically significant differences were found:**

- ❑ Among people from **public sector** and people from **private sector**. The former believe to larger extend that top management commitment is crucial for K.M success than people from private sector believe.
- ❑ Among people from big companies (151+) and workers from small companies. The former believe to larger extend that external consultants are crucial than people from smaller companies (16-).

Main Conclusions

- **What type of knowledge people use at work?**

1. **Knowledge from professional experience (M: 4,35)**
2. **Company's in house knowledge (M: 3,72)**
3. Knowledge accumulated from personal initiative (M: 3,26)
4. Knowledge from studies (M: 3,88)

- **What type of incentives the organization should use for K.M?**

The **knowledge workers** believe to larger extent that financial motives should be given to employees for K.M than the other staff categories (**top management, managers, administrative personnel**) believe.

Main Conclusions

- **How interviewed people rated the following reasons for K.M implementation?**

1) Need for tacit and undocumented knowledge recording & representation (M: 2,65)
2)Sudden knowledge-workers departure (M: 2,71)
3) Huge volume of files and documents (M: 3,1)
4) Necessity for new products development (M: 3,3)
5) Because the competitors followed a K.M policy (M: 4,76)
6) Market share reduction (M: 4,84)

- **Statistically significant differences were found:**

Among big companies and smaller companies. The former rated the reason No 1 higher that the latter. ***These companies they don't know what they know.***

Main Conclusions

- **What interviewed people believe to be the possible problems of explicit knowledge sharing through an assumed IT system?**

1) Lack of time (M: 3,88)
2) Difficulties with the files/documents categorization (M: 3,53)
3) Worker reluctance (M: 3,26)
4) Difficulties to understand this K.M process (M: 3,25)

- **Statistically significant differences were found:**

1) Among respondents from big companies (151+) and smaller companies (16-). The former rated the reason No 3 higher that the latter.

2) Among knowledge workers and other personnel categories. The former rated the reason No 3 higher than the latter.

Resources

- Thomas H. Davenport & Laurence Prussic, **«Working Knowledge: How Organizations manage what they know»**, Harvard Business School Press, Boston Massachusetts, **1998**.
- Ikujiro Nonaka & Hirotaka Takeuchi, **«The Knowledge Creating Company»**, Oxford University Press, **1995**.
- S. Shariq (1997), **«Knowledge Management: An Emerging Discipline»**, The Journal of Knowledge Management, Vol. 1, No 1, **September 1997**.
- Michael Polanyi (1967), *The Tacit Dimension*.
- G. Mentzas, **«The Future of Organisations and Knowledge Management?»,** European Commission, Information Society Technologies Program, Consultations Meeting, **23-24 May 2000.**
- J. Swan, S. Newell and M. Robertson, **«Knowledge Management: When will People Management Enter the Debate?», 2000**
- Nick Milton of Knowledge Transformation® International. Nick runs occasional Knowledge Management workshops for BOND. For more information, visit www.ktransform.com.
- http://www.knowledgeboard.com/
- Knowledge Board, which is one of the leading European web site in K.M area, is an online community to create a global exchange of Knowledge Management expertise and interest.
- http://km.gwu.edu/km/index.cfm
- This web site represents the attempt of George Washington University to share their knowledge in the KM area. The University offers a Master's and Doctoral program, as well as a KM Graduate Certificate program.
- http://www.knowledgemedia.org/
- www.knowledgemedia.org is the scientific platform for research in the field of Knowledge Communication, offering you access to the most current scientific content in the Knowledge Management domain.
- http://www.kmpro.org/
- This portal provides member access to the **KMPro Knowledge Center (KC)**, where members have full access to content as well as a *new and improved* forum to communicate with members and other KM enthusiasts.

End of Presentation

Thank you very much for your attention

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