10-Knowledge Managment

What is knowledge?

Knowledge that is used within an organization
A state of the mind

- "...a justified belief that increases an entity's capacity for effective action..." (Nonaka 1994)
- Knowing: "...understanding gained through experience and study; the sum or range of what has been perceived, discovered, or learned.." (Schubert 1998)
  An object
- A thing to be stored and manipulated (Carlsson et al. 1996)
  A process
- Knowledge is the process of applying expertise
  A capability
- Knowledge is the potential to define and influence actions and to take decisions
  Data → Information → Knowledge
- Information is raw data endowed with meaning
- Information becomes knowledge when it helps in facing organizational issues
  Knowledge → Information → Data (Tuomi 1998)
- Data may be forged only when people have knowledge to investigate facts in the environment
  A general underlying agreement
- Knowledge may come from the possession of information, data, but it is not restricted to them
- Knowledge is strictly tied to creativeness and the ability to contextualize general advice, expertise, best practices in a given situation
- Knowledge is strictly tied to "action" (making choices, learning about the environment, innovating,...)
  A lot of duality between action and decision. You need some creativity to contextualize the information, usually you have a context that will help to filter information to make the correct decision.
  Changing context requires different mechanism to give the best answers.

Organizational Knowledge: A Taxonomy

Internal K

- Resides within the firm boundaries
- E.g., expertise, personal competencies, market and customers knowledge, technical skills
  External K
- Resides outside the firm boundaries
- Organizations take specific actions to get this knowledge (e.g., hiring a consultant)
- E.g., Public agencies, Consulting firms, Internet, ...: they are all sources of external knowledge
  Personal (individual) K
- Resides within the mind and the action of individuals
  Organizational (collective) K
- Is specific of the organization and its culture, and internalized by its employees
- E.g., routines, best practices, methodologies for strategy and project management
  Tacit K
- Knowledge that cannot be codified and which resides in the expertise/competences of people and groups of people
  Explicit K
- Knowledge that can be codified in some sort of artifact (sw program, rules, document, ...)
  Knowledge can either stay in a person mind or be shared in the organization. Shared knowledge is used when the team share their own knowledge, usually each person of the team has a different type of knowledge(multidisciplinary knowledge). Act as a team and let the correct people handle the correct situation, know what each person can do well and cannot do well.
 Not all the knowledge in an organisation is written up. So you need to integrate new employee to have some common knowledge and let them take their position in the company(also why retirement/quitting is critical for the company as the person take away their tacit knowledge).

Why is knowledge important for a company?

The Resource-Based View of the firm: RBV
The organization is a set of resources
Some resources have the potential to become a source of sustained competitive advantage
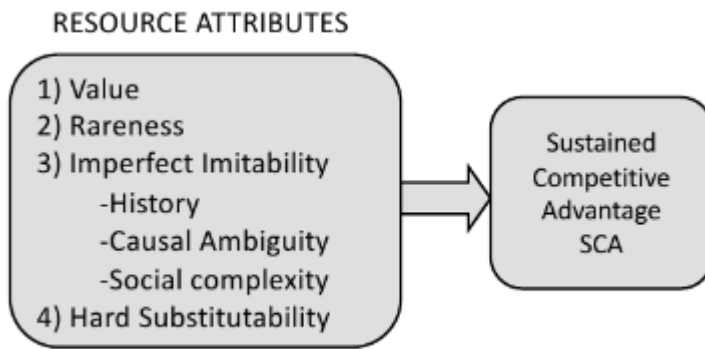
Companies likes money machines and things that are written and not in the mind of people. This cannot be done specially in innovation

SO we use the resource view of an organization to deal with knowledge as it tells us the few resources that are really important for the company. These factors are what make the company stands outs, it is why the customer come to the company. The competitive advantage is demonstrated to be key to the company successful.

Value of knowledge: can associate a monetary value to knowledge

Rareness: estimate how rare is the knowledge you are searching for

imperfect Imitability: is it easy to replicate what the knowledge do? If it is difficult you have a sustainable advantage on competitor

Hard Substituability: can I substitute my knowledge with something similar?

Knowledge and RBV

Most of the knowledge owned by a firm clearly shows the potential to adhere to the principles of the RBV theory
in order to become a source of SCA

- Value
- Rareness
- Low imitability
- Low substitutability

Personal skills		
Value	When skills become unique ("make things better than others")
Rareness	Skills become rare when they are perfectly integrated in a specific organizational environment
Imitability	Often derived from very complex and long social phenomena
Substitutability	It's not easy to find something that substitutes a 30-year-long expertise...

Organizational Best practices (procedures)		
Value	Efficiency and flexibility of business processes
Rareness	Also in this case, rareness derives from the strong integration with the organizational environment
Imitability	Firms tend to keep in secret their routines and procedures, in order to reduce imitability
Substitutability	Often, in a given industry, the main processes are the same for every company...

Usually managers do not understand how technology works so they try to understand complexity through time needed by competitors to catch up, but this is not easy to estimate by engineers as something complex to make could be easy to think about.

Managing knowledge: how

Knowledge Management (KM) is a very complex issue

- It's cross-divisional, enterprise-wide
- It's primarily a management issue
  Identify relevant forms of knowledge
    - Identify and cultivate virtuous cycles (and not vicious cycles of knowledge)
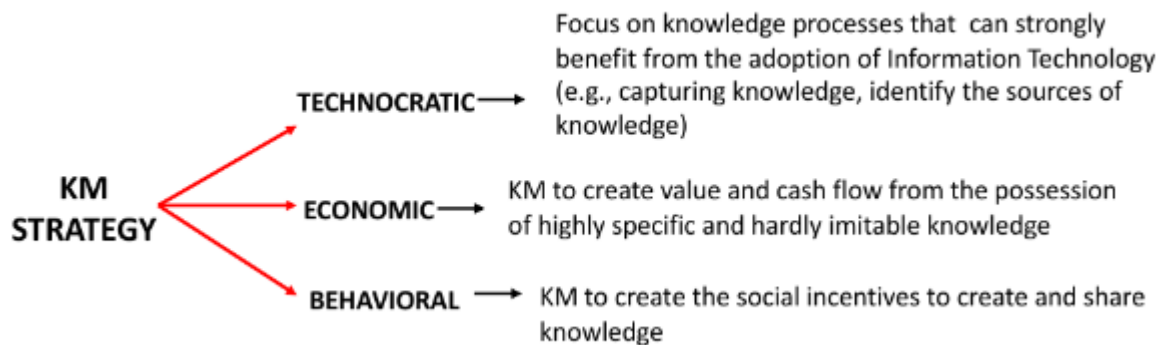   Create social incentives for sharing knowledge
      Enable the knowledge sharing environment
- It's boosted by IT tools: Knowledge Management Systems (KMS)
- Costs / Benefits are not easy to be evaluated (see open issues)
  Make sure that the knowledge never leave the company, if someone is going to retire soon try to assign them juniors that tries to learn their knowledge(Soft Managerial Levers).

Managing knowledge within organizations

- Different (theoretical) strategies [Earl 2001]
- Each KM initiative may be classified as a combination of strategies

KM STRATEGY

TECHNOCRATIC → Focus on knowledge processes that can strongly benefit from the adoption of Information Technology (e.g., capturing knowledge, identify the sources of knowledge)

ECONOMIC → KM to create value and cash flow from the possession of highly specific and hardly imitable knowledge

BEHAVIORAL → KM to create the social incentives to create and share knowledge

These methodologies are not exclusive, you should use them at the same time.

Knowledge management

systems

IT and Knowledge Management: KMS

Knowledge Management Systems (KMS)

> " "...a class of information systems applied to manage organizational knowledge..., that is, IT-based systems to support and enhance the organizational processes of knowledge creation, storage/retrieval, transfer, and application" [Alavi and Leidner 2001]

Every organizational IT-based system may adhere to the definition...
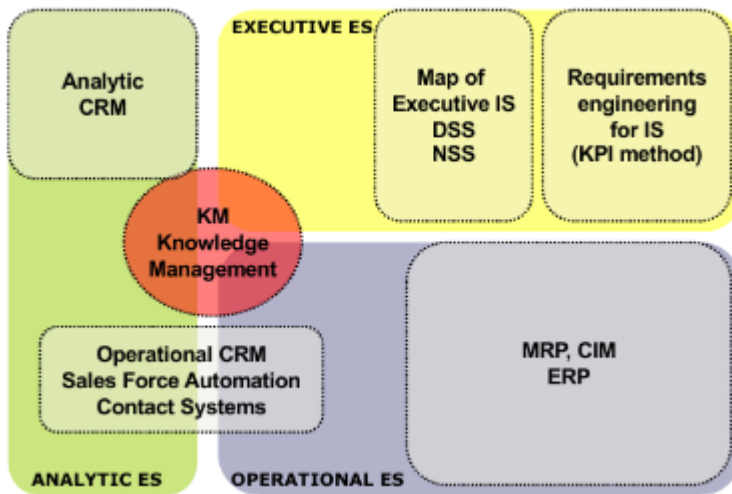
You need to focus on decision, need to give automatically information about the context, user based philosophy. Everything can be a KMS as long as it can give information that are related to the context the user is.