The Knowledge Management Models

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Agenda

Knowledge Management Models

- The Nonaka and Takeuchi model
- The Wiig Model
Knowledge Management Models


- All the models present different perspectives on the key conceptual elements that form the infrastructure of KM.
- They represent a holistic approach to KM: they are comprehensive and take into consideration people, process, organization, and technology dimensions.
- They have been reviewed, critiqued, and discussed extensively in the KM literature, by practitioners, academics, and researchers alike.
- The models have been implemented and field tested with respect to reliability and validity.

- This list is not exhaustive
The Nonaka and Takeuchi's model

- The main limitation of the several studies:
  - they focus particularly on abstract definitions and classifications of the concept of knowledge
  - without explaining specifically how a company can undertake a real build path of knowledge and learning,
  - thus making it difficult the diffusion in the practices of management.
- The model of Nonaka and Takeuchi is one of the models who first had the merit of giving full managerial value to the knowledge management, thus becoming a key point of the emerging body of KM.
- It is from their work that begins to be filled the gap between theory and practice, leading to an increase of significant scientific and operational contributions.
The Nonaka and Takeuchi's model

- The Nonaka and Takeuchi's theory comes from the study of Japanese organizations and the analysis of success, especially in the '80s, they were able to obtain.
  - According to the two authors, this success derives above all from the ability of the organization to create new knowledge, to disseminate it internally and to translate it into products, services and systems.

- The Knowledge-Creating Company approach refers to a dynamic development perspective of the organization, based on the creation of new knowledge, for the achievement of a competitive advantage.

- According to this approach, the process of innovation in the organization refers to the organization's ability to develop a model for the creation of new knowledge.
The Nonaka and Takeuchi's model

Nonaka and Takeuchi suggested that the movement through the four processes of SECI forms a “spiral”.

They assert that the spiral starts with a **socialisation phase**, in which tacit knowledge of individuals is exchanged. This is followed by an **externalisation phase**, in which new tacit knowledge is translated into explicit knowledge. This explicit knowledge is joint with existing explicit knowledge in the **combination phase**. The turn of the spiral concludes with the **internalisation phase**, in which this new explicit knowledge is absorbed by individuals and enriches their tacit knowledge base.

- Then the tacit knowledge is exchanged again, and the knowledge creation process continues along the spiral.
- Therefore, “organisational knowledge creation is a never-ending process that upgrades itself continuously”
The Nonaka and Takeuchi's model

1. **Socialization**: concerns the processes of sharing tacit knowledge between individuals through common experiences and collaborations. Key elements to capture tacit knowledge is **experience** (on the job training).

2. **Externalization**: it concerns the processes in which tacit knowledge is converted into explicit. Conversion is triggered by **dialogue and collective reflection**.

3. **Combination**: regards the transition from one to another explicit knowledge that is so systematized and structured in a new way, through **courses, seminars, manuals**.

4. **Internalisation**: refers to the conversion of explicit knowledge in tacit. Individuals reframe their own tacit knowledge based on new shared explicit knowledge. This is where real individual enrichment takes place from **learning by doing**.
The Nonaka and Takeuchi's model

This is a spiral that has no real end but instead may evolve and lead to renewed innovation.
The N&T model: the knowledge creation

- **Epistemological axis** outlines the place where conversion from tacit K to explicit K takes place. **Ontological axis** designates the place where K is transformed from individual to organizational.

- The two axes delineate the space in which a process of K creation spiral takes place.

- The **two axes actively interact continuously**: “the spiral emerges when the interaction between tacit and explicit K passes dynamically from inner ontological levels to higher levels.”

- The creation of K is therefore a fluid and dynamic process in which the four types of K that are created from each conversion mode are mutually connected and configure as a spiral path that, initially, moves at an individual level up to get progressively to the entire organization.
The N&T model: the knowledge creation

- The model works if the company offers appropriate frameworks and services to facilitate group activities and opportunities of individual knowledge accumulation.
- In particular, five necessary conditions must exist in the company:
  - **intentionality** to concretely achieve its objectives;
  - **autonomy** of the members so to create the right motivation and facilitation in outlining new working groups;
  - **fluctuation or the creative"chaos"** which consists in providing discussion of the given conditions;
  - **redundancy of information and expertise** that is the premise for the sharing of knowledge especially tacit, encouraging frequent communications and exchanges through such brainstorming activity.
The N&T model: the concept of “ba”

A further development of the studies proposed by Nonaka has extended its investigation to the social context in which K is developed by defining the concept of "ba", that is a shared space (physical, virtual or mental) where knowledge is embedded.

- **originating ba**: in which then prevail sharing feelings, emotions, experiences and mental models (phase of socialization);
- **interacting ba**: achieved mainly through the dialogue (phase of externalization);
- **cyber ba**: in which the interactions occur mostly through the use of IT (phase of the combination);
- **exercising ba**: a space for active participation and training that allow the improvement of certain behaviors (phase of internalization).
According to Wiig’s approach, because knowledge would be useful and valuable, it must be organized.

- Knowledge should be organized differently depending on what use will be made of it.
- K organized can be accessed using multiple paths that combine different K to the tasks to be completed.
- Some useful dimensions to consider are:
  - Completeness,
  - Connectedness,
  - Congruency,
  - Perspective and purpose.

The Wiig KM model is based on the principle that K, to be useful and valuable, must be organized through a form of network that is connected, congruent, and complete, and that has perspective and purpose.
The dimension of Wiig Model

- **Completeness** addresses the question of how much relevant K is available from a given source (human minds/databases).
- **Connectedness** refers to the well-understood and defined relations between the different knowledge objects.
- K base is said to possess **congruence** when all the facts, concepts, perspectives, values, judgments, and associative and relational links between the knowledge objects are consistent.
- **Perspective and purpose** refer to a particular point of view or a specific purpose through which we “know something”.
Three forms of knowledge and four types of knowledge combine a **KM matrix** that forms the basis of the Wiig KM model.

<table>
<thead>
<tr>
<th>Form of Knowledge</th>
<th>Type of Knowledge</th>
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<tbody>
<tr>
<td>Public</td>
<td>Factual, Measurement, reading, Stability, balance</td>
</tr>
<tr>
<td>Shared</td>
<td>Forecast analysis, “Market is hot”</td>
</tr>
<tr>
<td>Personal</td>
<td>The “right” color, texture, Company has a good track record</td>
</tr>
<tr>
<td></td>
<td>Expectational, When supply exceeds demand, price drops, Hunch that the analyst has it wrong</td>
</tr>
<tr>
<td></td>
<td>Methodological, Look for temperatures outside the norm, Check for past failures, What is the recent trend?</td>
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</tbody>
</table>
He defines **four types of knowledge**:
1. **Factual knowledge** deals with data and measurements, directly observable and verifiable
2. **Conceptual knowledge** involves systems, concepts, and perspectives
3. **Expectational knowledge** concerns with judgments, hypotheses, and opportunities held by knowers.
4. **Methodological knowledge** deals with reasoning, strategies, decision-making methods, and other techniques.

And **three forms of knowledge**:
1. **Public knowledge** is explicit, taught, and routinely shared knowledge that is generally available in the public domain.
2. **Shared expertise** is proprietary knowledge assets that are exclusively held by knowledge workers and shared in their work or embedded in technology.
3. **Personal knowledge** is the least accessible but most complete form of knowledge. It is typically more tacit than explicit.
The Wiig KM model is perhaps the most pragmatic of the models and can easily be integrated into any of the other approaches. This model enables practitioners to adopt a more detailed approach of KM going beyond the simple tacit/explicit dichotomy.