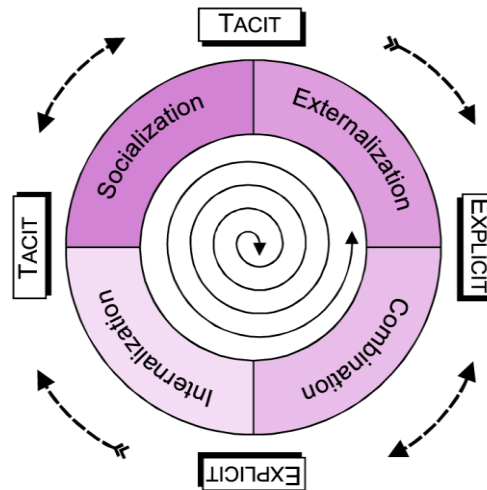




The SECI model

Ikujiro Nonaka and Hirotaka Takeuchi



Source: Theorized by Nonaka and Takeuchi (1995)

الركائز الأساسية لإدارة المعرفة

Principles of Knowledge Management

إعداد الباحثة :

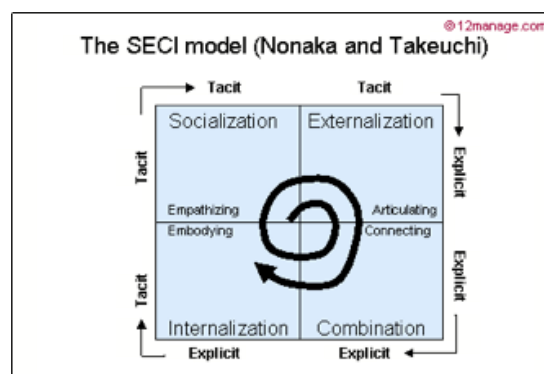
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The SECI model

The SECI model comes out of research in “knowledge management,” which is related to “organizational learning,” “business administration,” and “information systems.” SECI stands for socialization, externalization, combination, internalization—a model of knowledge creation proposed by [Ikujiro Nonaka](#)

The process moves from tacit knowledge to explicit knowledge and back. “Tacit knowledge is personal, context-specific, and therefore hard to formalize and communicate. Explicit or codified knowledge, on the other hand, refers to knowledge that is transmittable in formal, systematic language” [9]. Tacit knowledge tends to be specific to a context (available in a particular time and place), practical, routine, and procedural. Explicit knowledge can transcend a specific context (and is transferable to other times and places) and tends to be rationalizing, theoretical, and declarative.



Nonaka postulates four modes of “knowledge conversion that are created when tacit and explicit knowledge interact.”

- Socialization (tacit to tacit) “is the process of converting new tacit knowledge through shared experiences in day-to-day social interaction.”
- Externalization (tacit to explicit) is a process whereby “tacit knowledge is articulated into explicit knowledge...so that it can be shared by others to become the basis of new knowledge.”
- Combination (explicit to explicit) is a process whereby “explicit knowledge is collected from inside or outside the organization and then combined, edited, or processed to form more complex and systematic explicit knowledge...The new explicit knowledge is then disseminated among the members of the organization.”
- Internalization (explicit to tacit) is a process whereby “explicit knowledge created and shared throughout an organization is then converted into tacit knowledge by individuals...This stage can be understood as praxis,

where knowledge is applied and used in practical situations and becomes the base for new routines.”

How the SECI Model Maps to the Analysis-Synthesis Bridge Model :

The analysis-synthesis bridge model describes a four-step design process. It begins with :

1. directly observing a current situation.
2. reflecting on observations of the current situation to create a model representing essential elements.
3. reflecting on the model of the current situation to create a second model representing essential elements of an improved situation.
4. instantiating the second model in a physical form or prototype.

The four steps of the analysis-synthesis bridge model correspond to the four steps of the SECI model:

Step 1:

Observing the current situation is a form of **socialization**. Insight-gathering methods or problem-finding methods, such as ethnography, often rely on acquiring tacit knowledge through inhabiting a specific context and interacting with others in that context. Nonaka writes, “The key to acquiring tacit knowledge is experience. Without some form of shared experience, it is extremely difficult for one person to project her- or himself into another individual’s thinking process.”

Step 2:

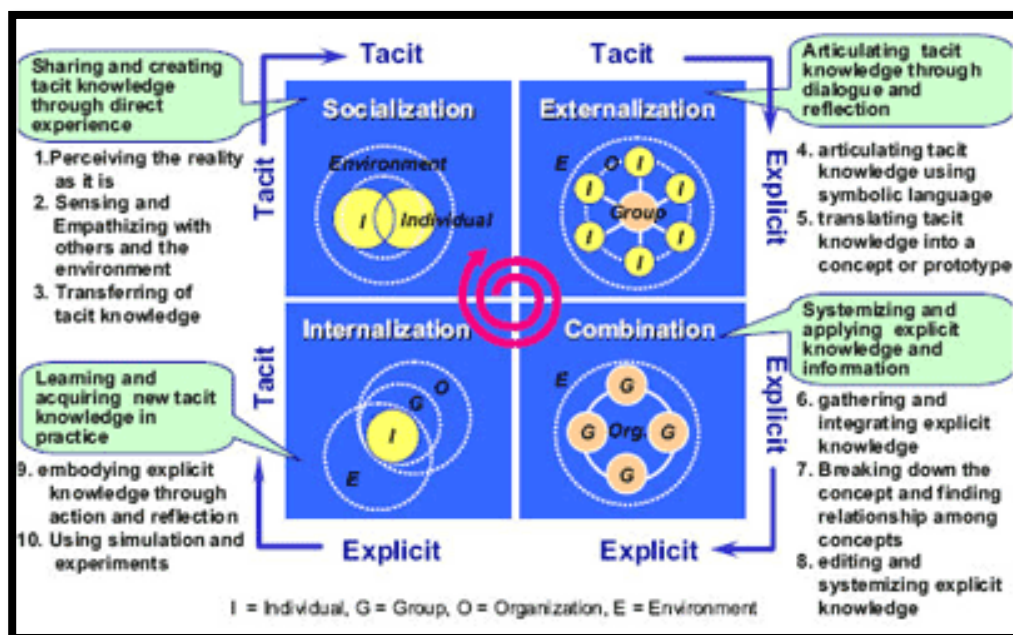
Modeling the current situation is a form of **externalization**. Sharing one’s experience and insights with others, for example, writing an ethnography, requires abstracting and generalizing. Nonaka writes, “Externalization...is the quintessential knowledge-creation process in that tacit knowledge becomes explicit, taking the shapes of metaphors, analogies, concepts, hypotheses, or models.” He adds, “To make a hidden concept or mechanism explicit out of accumulated tacit knowledge, abduction, or retroduction is effective rather than induction or deduction.”

Step 3:

Modeling a better situation is a form of **combination**. A designer looks at aspects of what is and imagines combining them with other things that he or she has experienced or imagined. Nonaka writes that combination “synthesizes knowledge from many different sources in one context. The combination mode of knowledge conversion can also include the ‘breakdown’ of concepts. Breaking down a concept...also creates systemic, explicit knowledge.”

Step 4:

Instantiating a model is a form of **internalization**. Prototyping requires working out many details and determining many relationships, creating a new level of knowledge of the model on which the prototype was based. Nonaka writes, “Explicit knowledge, such as product concepts or manufacturing procedures, has to be actualized through action, practice, and reflection so that it can really become knowledge of one’s own.”



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Evenson ,S. and Dubberly, H. " Design as Learning- or "Knowledge Creation"—the SECI Model". Interactions magazine Volume XVIII January – February (2011). Available : http://www.dubberly.com/wp-content/uploads/2011/02/ddo_article_design_as_learning.pdf , (