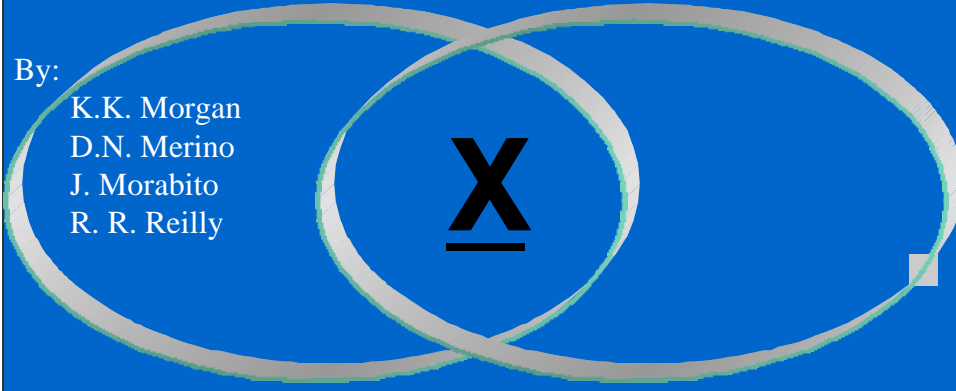


Defining Coalescent Knowledge:
A Revision of Knowledge Creation Theory

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The slide features a blue background with a white Venn diagram consisting of two overlapping circles. In the center of the intersection, there is a large, bold, black 'X' with a horizontal line underneath it. The text is arranged as follows: the title is at the top in white serif font; the authors' names are listed on the left side of the Venn diagram; the date and initials '(KKM)' are at the bottom left; the organization name and website are at the bottom center; and the slide number is at the bottom right.

Thank you for the opportunity to present our views of how knowledge creation theory should be revised.

Management Consultants

- Knowledge creation
- Transfer
- and Management
- Competitive advantage

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In today's environment, management consultants must be able to demonstrate how knowledge creation, transfer, and management can provide their clients with a competitive advantage. To accomplish this objective, management consultants focus on tacit knowledge as the source to create an advantage. The acquisition of tacit knowledge from an individual is a complex task. We maintain that the complexity is caused by the fact that the current definition of knowledge creation theory does not address all the dimensions of knowledge. Let's look at the current dimensions.

Dimensions of Knowledge

1. Tacit – Individual knowledge, which is not easily visible and expressible
2. Explicit – Public knowledge, which is easily visible and expressible in a formal and systematic way

Baumard, 96/99
 Nonaka and Takkeuchi, 1995)
 Morabito, Sack, and Bhate, 1999

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The foundation of knowledge creation theory is based on knowledge having two dimensions: Tacit and Explicit (Baumard, 96/99). The following are accepted definitions for tacit and explicit dimensions:

Tacit Knowledge: Individual knowledge, which is not easily visible and expressible; Subjective; Knowledge of experience; Simultaneous knowledge; Analog knowledge (Morabito, Sack, and Bhate, 1999), (Nonaka and Takkeuchi, 1995)

Explicit Knowledge: Public knowledge, which is easily visible and expressible in a formal and systematic way; Objective; Knowledge of rationality; Sequential knowledge; Digital knowledge (Morabito, Sack, and Bhate, 1999), (Nonaka and Takkeuchi, 1995)

Which Dimension is the key to a Competitive Advantage?

- Explicit
- Tacit

J.C. Spender (93)

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Based on these definitions, the question is: “Which Dimension is the real key to a Competitive Advantage?”

In further examination of explicit knowledge, it can be determined that this knowledge dimension would not facilitate the creation of a sustainable competitive advantage. A competitor would be able to quickly adapt to any changes in the environment, because the knowledge used to create these changes is in the public domain.

Therefore, the management consultant must focus his/her attention on tacit knowledge. By definition, tacit knowledge is not easily visible and expressible. The actual capturing of an individual’s tacit knowledge is a formidable task. If tacit knowledge is the key to gaining a competitive advantage, then further analysis of the knowledge creation theory may hold the key as to how we can use it to be successful in the marketplace.

Knowledge Creation Theory

<u>Process/Mode</u>	<u>Knowledge Transition Form</u>
Socialization	Tacit-to-Tacit
Externalization	Tacit-to-Explicit
Combination	Explicit-to-Explicit
Internalization	Explicit-to-Tacit

Nonaka and Takkeuchi, 1995
Morabito, Sack, and Bhate, 1999

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Knowledge creation theory describes the organization knowledge creation process. The process is shown in the table above;

(Morabito, Sack, and Bhate, 1999), (Nonaka and Takkeuchi, 1995).

- Socialization, which is the process of moving tacit knowledge from one individual to another.
- Externalization, which is the process of moving tacit knowledge from an individual to the public domain (Explicit knowledge)
- Combination, which is the process for combining public knowledge.
- Internalization, which is the process for moving public knowledge to individual knowledge

Let's take a more in-depth view of the the first process in creating knowledge.

Socialization

- Two or more individuals
- Dialogue
- Observation
- Use of fields of interaction
- Repetitive action
- Establish a common set of constructs defining the knowledge being communicated

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In this process, an individual shares his/her tacit knowledge with another individual or a group via some form of dialogue and/or observation (Nonaka and Takkeuchi, 1995), (Morabito, Sack, and Bhate, 1999).

In any dialogue and/or observation, each individual brings his or her tacit and references/links to explicit knowledge. For this analysis, we will assume that the exchange of knowledge will be via dialogue. During the dialogue process, the first individual tries to define his/her tacit knowledge for the second person(s). This process requires the use of fields of interaction. The second person(s) then links their knowledge base to the knowledge being communicated. This is a repetitive action until the first and second person(s) agree on a common set of constructs, which define the knowledge being communicated.

This process has now created a shared virtual knowledge, which only exists between the individuals involved in the dialogue.

What is this knowledge ?

- Is it Tacit knowledge?
- Is it shared knowledge?
- Is it Explicit knowledge?
- Is it virtual knowledge?

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What is this knowledge that we have created?

Is it Tacit? No, because two individuals are aware of it's existence

Is it shared? Yes

Is it Explicit? No, because it is not expressed in a formal & systematic way and it is not in the public domain

Is it virtual? Yes. In it's initial state

Therefore the following conclusion can be drawn: The knowledge, of the two people involved in the dialogue, came together to form a new knowledge dimension, which is shared, initially virtual, and is not public.

So what would be a good name for this knowledge dimension?

Coalescent

- To grow together; fuse
- To come together to form one whole unit

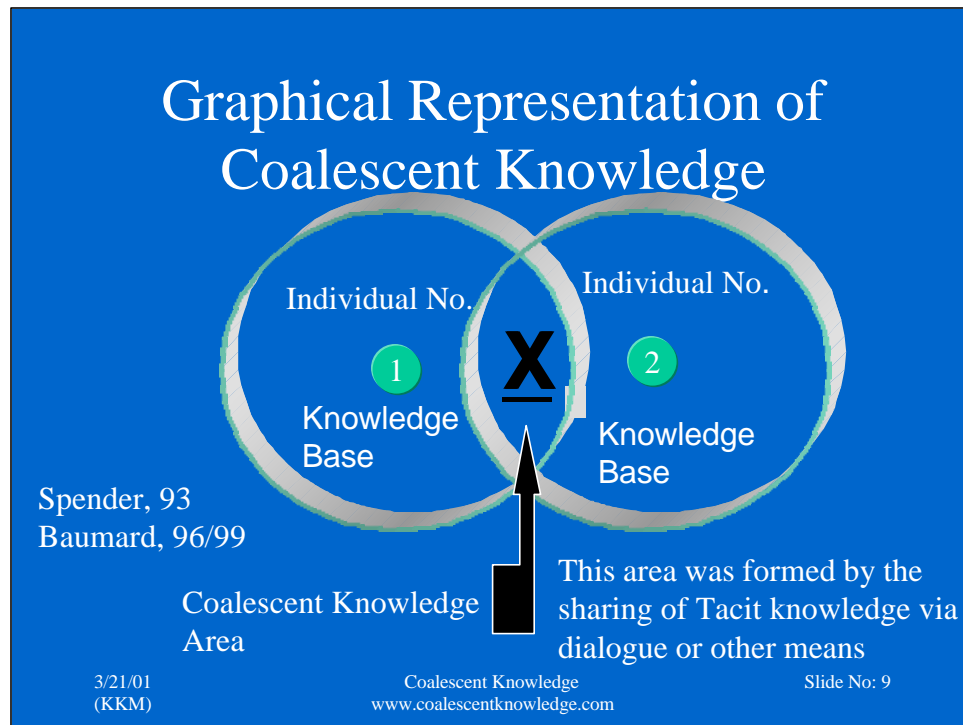
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A search for a word that would define this knowledge creation process resulted in the selection of coalescent. The dictionary definition is: 1. To grow together; fuse. 2. To come together to form one whole unit. From this definition, we conclude that the coalescing of the knowledge of the two individual (s) formed the new knowledge. Therefore, it is logical to name it Coalescent.

The definition of Coalescent dimension would be: Shared knowledge, which is visible and expressible by one or more people, but not public knowledge. The next slide has a graphical representation of the coalescent dimension.



Spender's (1993) communal knowledge is common to a group or community of interest, as a strategic resource.

Baumard (1996/99) discusses collective knowledge, which is either in the Tacit or Explicit dimension.

As you can see "X" does mark the location of the Coalescent knowledge dimension. This knowledge dimension is virtual in its initial state. If one or more individuals are aware of the knowledge, then the knowledge could be codified. I would suggest that codifying knowledge takes time and reduces innovation, because individuals are focusing on codifying and not on creating more. The key is knowing that the Coalescent knowledge dimension exists. The codification will take care of itself as the shared knowledge matures.

The Ripple Effect

- Externalization ←
- Combination
- Internalization

Nonaka and Takkeuchi, 1995

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The second process in creating knowledge is externalization. In this process, tacit knowledge is converted into explicit knowledge via metaphors, analogies, concepts, hypotheses (Nonaka and Takkeuchi, 1995), (Morabito, Sack, and Bhate, 1999). This process is very similar to the socialization process. The process starts with tacit knowledge and effectively creates coalescent knowledge as defined in the previous process. The coalescent knowledge is then externalized to the point of creating explicit knowledge, which by definition is public knowledge. Therefore, the externalization process should start with coalescent and not with tacit knowledge.

The Ripple Effect

- Externalization
- Combination
- Internalization



Nonaka and Takkeuchi, 1995

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The third process in creating knowledge is combination. In this process, individuals exchange and combine different bodies of explicit knowledge (Nonaka and Takkeuchi, 1995). In order to complete this process, the individual(s) must link his/her tacit knowledge to the explicit knowledge. The dialogue between the individuals would create a shared understanding (coalescent knowledge) of the combined explicit knowledge. The process then creates a new explicit knowledge. The steps of this process are the same as the steps in the externalization process, except for the conversion of explicit knowledge to coalescent knowledge. Therefore, the combination process should end with the creation of coalescent knowledge and not explicit knowledge, since the externalization process creates it.

The Ripple Effect

- Externalization
- Combination
- Internalization ←

Nonaka and Takkeuchi, 1995

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The fourth process in the knowledge creation process is internalization. In this process, explicit knowledge is converted to tacit knowledge. This process leads to reframing of tacit knowledge (Nonaka and Takkeuchi, 1995), (Morabito, Sack, and Bhate, 1999). Since this process links to the combination process, which creates coalescent knowledge from explicit knowledge, the input to this process would be coalescent knowledge rather than explicit knowledge. This process would be the mirror image of the socialization process.

Knowledge Creation Theory

<u>Process/Mode</u>	<u>Old Knowledge Transition Form</u>	<u>New Knowledge Transition Form</u>
Socialization	Tacit-to-Tacit	Tacit-to-Coalescent
Externalization	Tacit-to-Explicit	Coalescent-to-Explicit
Combination	Explicit-to-Explicit	Explicit-to-Coalescent
Internalization	Explicit-to-Tacit	Coalescent-to-Tacit

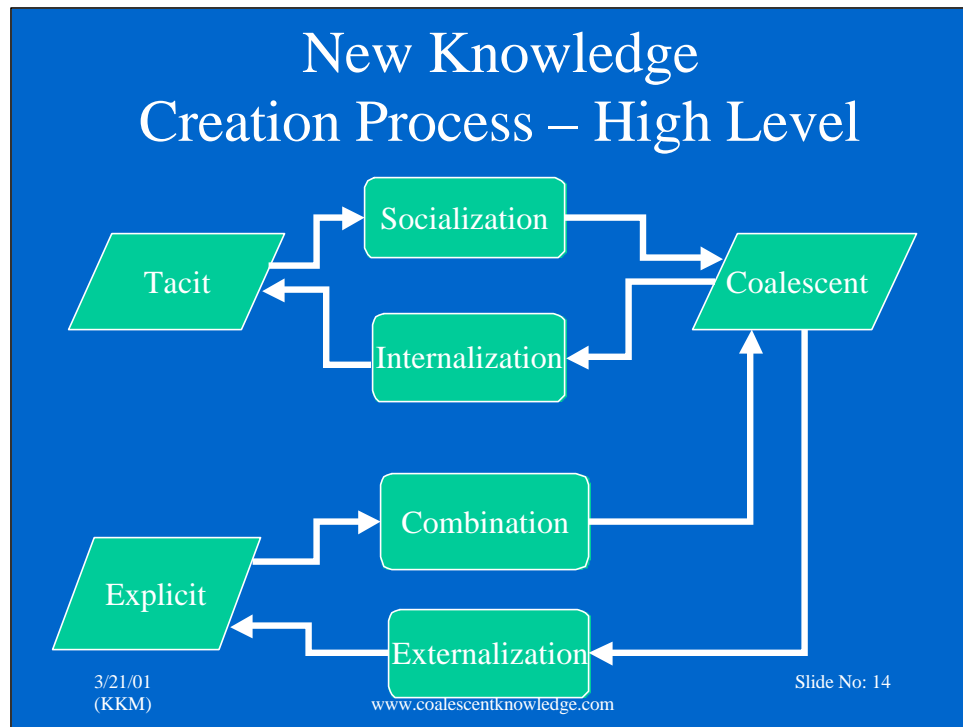
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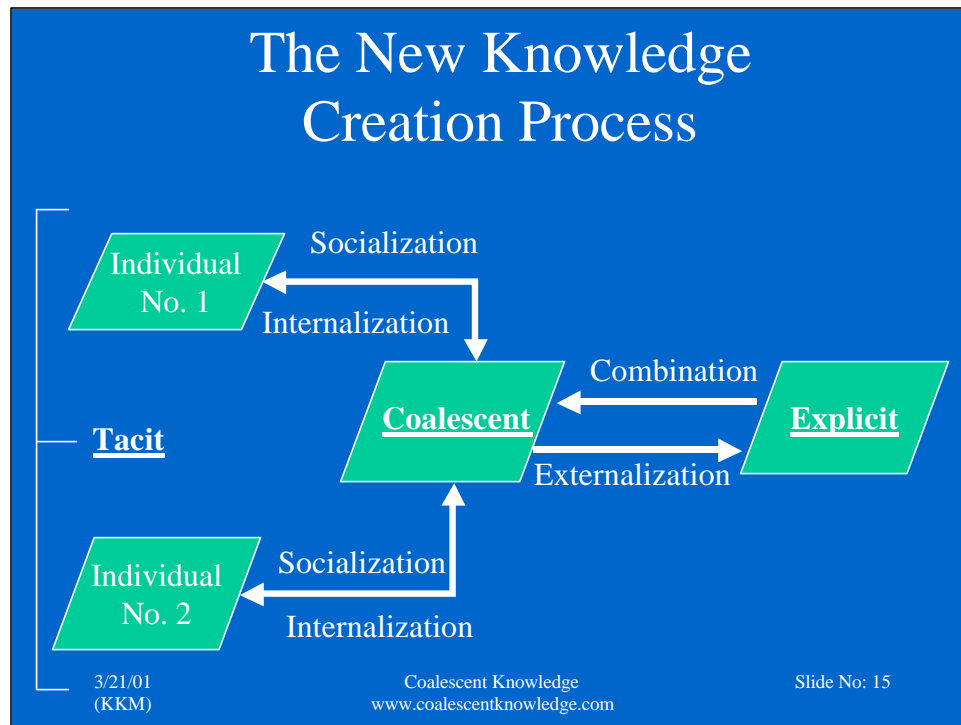
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The acceptance of a new knowledge dimension would change the knowledge creation theory in the following way:

- The Socialization process would change Tacit in to Coalescent knowledge.
- The Externalization process would change Coalescent to Explicit knowledge
- The Combination process would change Explicit to Coalescent knowledge
- Internalization, which is the process for moving public knowledge to Individual knowledge



The knowledge creation process can now be changed to the process flow depicted above. Let's look at the process at a lower level.



In this process flow, you can see that the creation of new Tacit knowledge does not require the inclusion of Explicit knowledge. As Coalescent knowledge matures it can be externalized to become Explicit knowledge.

If we only had one individual in the diagram, then that individual would have both Tacit and Coalescent knowledge. If that individual were to internalize some Explicit knowledge, then the Explicit knowledge would be converted to Coalescent knowledge. The Coalescent knowledge is shared between the individual and the creators of the explicit knowledge. Although the creators are not actively participating in the dialogue, they are assigned a virtual role in the dialogue by the individual doing the internalization.

I like to view Explicit knowledge as being the mass storage dimension. Knowledge is created by the interaction between the Coalescent and Tacit dimension.

Advantages of Coalescent Knowledge

- Visible and expressible
- Not public knowledge
- Can be used to create a sustainable competitive advantage
- Facilitates the opportunity for groups to act as if they have one mind

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The advantage of having this new knowledge dimension is the following:

1. Coalescent knowledge is visible and expressible
2. Coalescent knowledge is not public knowledge
3. Knowledge, which is visible, expressible, and not in the public domain can be used to create a sustainable competitive advantage.
4. Coalescent knowledge facilitates the opportunity for groups to act as if they have one mind.

Competitive advantage

- Fit of activities
- Be different from competitors
- Must be able to create new competencies
- Competencies grow when they are applied
- The thread between experts is acting with One Mind

Porter, 1996; Hamel & Prahalad, 1989; Pearce & Robinson, 1997; Collins & Porras, 1996; Pascale, Milliemann, & Grpgoja, 1997

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Porter (1996) stated that the fit of activities used in providing service/products to customers, that are different than those of competitors, drives both a competitive advantage and its sustainability. To achieve this advantage, a company must be able to create new competencies that support these different activities.

From a competitive advantage perspective, the understanding of how coalescent knowledge is created and used by teams (groups) to create new competencies will facilitate creating a competitive advantage in the marketplace. Unlike physical assets, competencies do not deteriorate as they are applied and shared; they grow (Hamel & Prahalad, 1990). An underlying thread that links many strategic management experts together is the need to construct a strategy that will not only win in the marketplace but that can be communicated to employees implementing the strategy so that they can act with One Mind (Porter 1996), (Hamel & Prahalad 1989), (Pearce & Robinson, 1997), (Collin & Porras, 1996), (Pascale, Milliemann, & Grogaja, 1997). The Coalescent knowledge dimension facilitates the organization in acting as “ONE MIND” in the implementation of the organization’s strategy.

Creating New Competencies

- Deft Groups (“Groups that act as one mind”)
- More effective
- Lower cost
- Compared to other groups in experiment

McGarth, MacMillian, and Verkataraman, 1995

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In a study by McGrath, MacMillian, and Verkataraman (1995), they found that deft groups (“Groups that act as one mind”) are more effective, at statistical correlation of 0.41 with a significance level of 0.0001, at creating emerging competencies and at a lower cost to the organization than other groups being measured. It should be noted that “deftness” does not imply that group worked together, nor does it necessarily imply absence of conflict, high job satisfaction or high moral. Therefore, a group that is acting as one mind to create new competencies must have a shared knowledge base (the coalescent dimension) that they are working from. Also, the knowledge must not be public, since other groups in the experiment did not show the same characteristics.

Note: Title: Defining and Developing Competence: A Strategic Process Paradigm.

A study of 160 new initiatives in 40 organizations from 16 countries.

Variables studied: Competence, Comprehension, and Deftness

Deftness represents the extent to which the process by which a team (group) solves problems are effortless, effective, and well-honed.

Implications for Management Consultants

- Shared/virtual knowledge is the key to creating a competitive advantage
- Current knowledge dimensions do not address shared/virtual knowledge
- The Coalescent dimension addresses the shared/virtual knowledge issue
- Enhances the ability to deliver a competitive advantage to clients

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Many consultants and authors have tried to work around the issues associated with the current knowledge creation theory, by defining some form of shared knowledge [Collective, common, distributed, working, etc...] (Baumard, 1996/99), (Daven and Prusak, 1998), (Krogh, Ichijo, and Nonaka, 2000), (Dixon, 2000), (Fisher and Fisher, 1997) (Sveiby, 1997), (Nonaka and Takkeuchi, 1995), (Morabito, Sack, and Bhate, 1999).

They always locate these types of knowledge within the domain of tacit knowledge. The definition of tacit knowledge does not permit a reasonable fit or explanation for any form of shared knowledge. Therefore, the knowledge creation theory must be changed to accommodate different forms of shared knowledge. The inclusion of coalescent knowledge as one of the knowledge dimensions and the updating of knowledge creation theory and process will solve this issue and enhance the ability of management consultants to demonstrate that knowledge creation and transfer will deliver a competitive advantage in the marketplace.

Future research areas would be in enhancing the creation and managing of Coalescent knowledge in groups and the organizations.