Creating Actionable Knowledge within the Organization to Achieve a Competitive Advantage

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Agenda

- Information, Knowledge, & a Creation Model
- Classic Management Process
- Organizational Structures
- Supporting Research and Competitive Advantage Attributes
- Summary

 We will look at brief definitions of information, knowledge and cover the interaction of the two individuals in a knowledge creation model.

Once, we have a knowledge creation model, we will look at the classic management process for a means to implement the knowledge creation model in this process.

Some typical organization structures will be reviewed to look for a location to implement the updated classic management process and the knowledge creation model.

Compare the expected results to research related to competencies and views of experts on some of the attributes required to create a completive advantage.

Summarize the contents of the paper.

Information

- Is Data, Words, Pictures, etc..
- Sampler (1998) classified 2 types:
  1. Time sensitive
  2. Required knowledge to be understood
- Two more types:
  1. General
  2. Noise

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In many cases, knowledge and information are used interchangeably, but they are not the same. Information is data, numbers, words, pictures, etc.. Sampler (1998) stated that there were two types of information. The first type was information that was time sensitive. This type of information had to be used quickly before it become useless. The second type was information that required knowledge to be understood. An example would be a company balance sheet. This information has labels and numbers associated with the labels. To understand the balance sheet a person must have knowledge of what the labels mean as well as their interaction with other labels. If that knowledge were not available then the information on the balance sheet would not have any significant meaning to the perceiver. A case can be made that there are two more types of information. A third type of information could be called General. General information is information, that everyone in a given environment has the knowledge to understand. The fourth type is noise. Noise is information that an individual does not have the knowledge to understand at this time. Information can be converted to knowledge by using it in the knowledge creation process, but the transformation is different for each person. Baumard (1996) uses the following example to illustrate the conversion of information to knowledge. "The Berlin Wall has fallen is information. But this chunk of data will transform itself into different representations according to the actor or group of actors receiving it. The information will modify the knowledge of the actors in different ways, according to whether they are, for example, Russian or German, scientists or labourers, political decision-makers or research workers."
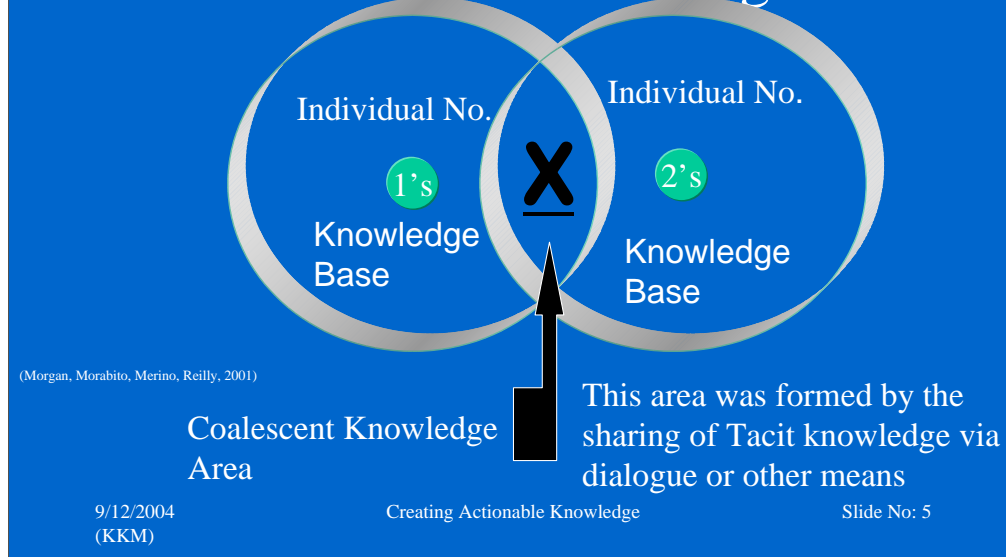
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Tacit knowledge is individual knowledge. This knowledge is not easily visible and expressible. Based on the accepted definition of Tacit knowledge this knowledge could never be shared. From a competitive view point it would be classified as private knowledge and could be useful if it was easily expressible.

Explicit knowledge is codified in a systematic way and is transferable. This knowledge can reside in the Private (Trade secrets) or the public (Best Practice) domain. Also, it can be classified as either information or knowledge. The classification is made by the individual or group relationship to it. Example: An author, who has written a book, sees his book as explicit knowledge per the definition. Other individuals or groups see the book as information. If you read a book, when does the information in the book become knowledge? That question will be answered later.

Today, the classification of knowledge as private or public is important when looking to use it to achieve a competitive advantage. Matusik and Hill (1998) discussed the need for the distinction and relationship of private vs public knowledge. Private knowledge is firm specific knowledge, resides in the internal environment, and can be a source of competitive advantage. Whereas, public knowledge is not firm specific, resides in the external environment, and is in fact a public good. Therefore, public knowledge cannot be used to create and sustain an advantage, but the failure to apply it within the firm can be a source of competitive disadvantage.

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Graphical Representation of Coalescent Knowledge

Individual No. 1's Knowledge Base

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Individual No. 2's Knowledge Base

(Morgan, Morabito, Merino, Reilly, 2001)

Coalescent Knowledge Area

This area was formed by the sharing of Tacit knowledge via dialogue or other means

For a management consultant to successfully assist an organization in creating new actionable knowledge (knowledge that is used to create value) for the organization, the consultant must be aware of a new knowledge definition called Coalescent knowledge. This is created through a dialogue process. Morgan, Morabito, Merino, and Reilly (2001) provide the following explanation of the creation of knowledge in the Coalescent knowledge dimension: "The first process in creating knowledge is the socialization. In this process, an individual shares his or 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 knowledge 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. The process has now created a shared virtual knowledge, which only exists between the individuals involved in the dialogue. This knowledge is shared and not codified, so it does not fall within the definition of tacit or explicit knowledge."

Coalescent Knowledge Attributes

- Created via the Dialogue process
- Is Visible, Expressible, Shared, and Virtual
- Can be Private or Public
- Scalable from Two to Many
- Facilitates Group Members to Act as if they have ONE Mind

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In summary, Coalescent Knowledge is created via a dialogue process between two or more individuals. The knowledge is visible, expressible, shared, and virtual to members involved in the dialogue process. The environment that the knowledge is created in determines whether it has a public or private classification. The shared knowledge is scalable from two to many and facilitates group members to act as if they have one mind.

The New Knowledge Creation Process
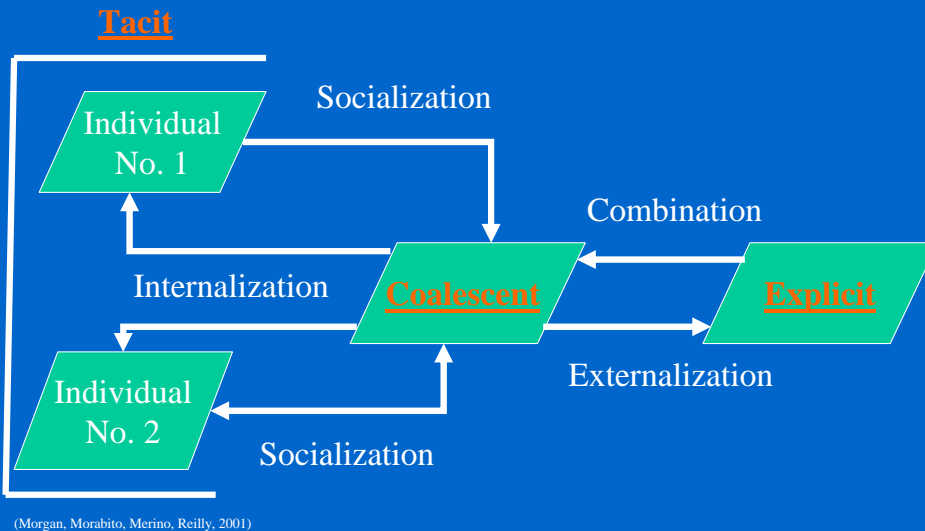
(Morgan, Morabito, Merino, Reilly, 2001)

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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 via codification to become explicit knowledge – private or public. 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, the individual doing the internalization assigns them a virtual role. Think of Explicit knowledge as the mass storage dimension for knowledge created by the interaction between the knowledge in the Coalescent and Tacit dimensions."

As was stated earlier, Explicit knowledge can be classified as either information or knowledge. The classification is made by the individual or group relationship to it. Example: An author, who has written a book, sees his book as explicit knowledge per the definition. Individuals or groups see the book as information. If you read a book, when does the information in the book become knowledge? Nonaka and Takeuchi (1995) believe that it is converted to tacit knowledge when you do something with it. This raises the following question: Is thinking doing? My answer to that question is: It depends on the environmental requirements required to apply the knowledge. Example: You can read and then think about the proper way to shoot a foul shot in basketball, but you will never have the tacit knowledge to successfully complete a high percentage of the foul shots without doing the physical activity associated with it. On the other hand, if you read the information or a book on shooting foul shots, you have created coalescent knowledge.

Knowledge that is shared by two or more individuals can be considered communal knowledge (J.C. Spender, 1993). Based on the Morgan, Morabito, Merino, and Reilly (2001) knowledge creation model and the definition of Tacit knowledge, communal knowledge can only exist in the coalescent or explicit knowledge dimension. On the surface, there may appear to be shared tacit, but Baumard's (1996) investigation found that given a shared event/ learning experience, each person involved had different tacit knowledge regarding it. The true knowledge created by the shared event/ learning experience required the mining of tacit knowledge from each person. These mined knowledge segments were then merged together to obtain the actual knowledge of the event. The application of the Coalescent knowledge creation theory will create the knowledge that Spender (1993) described as the means of creating a competitive advantage.

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General Rules of Knowledge

- Explicit knowledge is information, when looked at from a consumer's viewpoint
- Information is changed into Coalescent Knowledge when it is consumed via dialogue, reading, observing, thinking, etc..
- Coalescent knowledge is changed into Tacit Knowledge when the individual uses the Coalescent knowledge under the appropriate environmental conditions

Therefore we can establish some general rules of knowledge:

1. Explicit knowledge is information, when looked at from a consumer's viewpoint

2. Information is changed into Coalescent Knowledge when it is consumed via dialogue, reading, observing, thinking, etc..

3. Coalescent knowledge is changed into Tacit knowledge when the individual uses the Coalescent knowledge under the appropriate environmental conditions

Classic Management Process

Planning → Leading → Organizing → Controlling

Feedback Loop
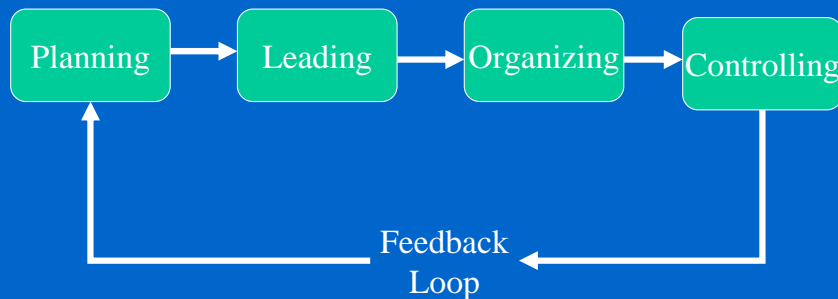
The classic management process is comprised of four sub-processes: Planning, Organizing, Leading, and Controlling (PLOC) (Freeman and Stoner, 1989). The controlling and planning sub-processes are connected with a feedback loop to ensure that the objectives of the plan are being met. The controlling function compares performance to the standards set in the planning process. If deviations are detected, the information is fed back to the planning process for changes in the plan that will cause the standards to be met. During the controlling and/or planning processes, an evaluation should be performed to determine why there was a deviation from standards. With this information, we can conclude that what managers do is PLOCing!

This evaluation should be a reflection, since it reviews the present and the past to determine what corrective action should be taken. Baumard (1996) states that reflection is a method that could be used to build tacit knowledge. As an individual reflects on a completed (something that was done) or in progress (something being done) activity, they review what did and didn't work, based on their knowledge of the activity, and then create different ways to complete the activity more successfully in the future. The reflection is a mental practice/exercise that restructures how activities should have occurred to meet measurements of success. Management has used the concept of reflection in quality management's lessons learned and project post mortem reviews, as well as communities of practice forums.

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Powell's (1998) research into the use of reflective practice in organizations for his dissertation, found that management's utilization of reflection in lesson learned, project post mortem reviews, etc was mostly a single loop learning experience and that the same lessons were learned multiple times. Reflection on action was virtually nonexistent. He also found that post-mortems and reflection were rarely used in conducting daily management of the business.

If management is not using reflective practice in the daily management process, then what are they using?

Thoughtful Action vs Reflective Practice	
(Phillips, Bain, McNaught, Rice, & Tripp; 1999)	
Thoughtful Action	**Reflective Practice**
It is instantaneous – one decides what to do next, thinking about it only a split second.	It requires one to take time out to reflect. It involves a conscious attempt to plan, describe, and reflect on the process and outcomes of the action.
There is no cycle of clearly defined separate phases. It is an unpredictable sequence because one responds to events in the situation itself.	It is a clear cycle of separate moments in which one engages in completely different activities.
There is no describing moment, because one is engaged in acting.	As reflection occurs after action, one creates an observational record and describes the results of the action.
One is not aiming at an improvement to the practice. One is thinking about how best to do what one always does.	The major aim is to produce an improvement to the practice.
There is no element of inquiry and one is not deliberately setting out to learn something from experience.	One designs and uses inquiry strategies to find out more about one's practice.

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Research on the subject of reflective practice lead me to the following:

Murdoch University in Australia in their "Handbook for Learning-centered Evaluation of Computer-facilitated Learning Projects in Higher Education" (Phillips, Bain, McNaught, Rice, & Tripp; 1999) provides insight into what management is using. They state that reflective practice is one form of action inquiry. Action inquiry is a family of different methods, which are similar in that they share the same basic cycle of activities (Plan, Act, Describe, Review, and Feedback to Plan). Most people are familiar with this cycle, since this is the process that they use when they act thoughtfully and not automatically. The authors state that "while thoughtful action may contain elements of planning, acting, and reviewing, these are not consciously employed as a cycle". They further state that "thoughtful action is not automatic thinking about what one is doing, and it does not change into reflective practice". "On the other hand, we do act thoughtfully through the reflective practice. Therefore, reflective practice incorporates thoughtful action. This table shows a comparison between thoughtful action and reflective practice.

Reflective practice has been used to think about and analyze individual actions with the intent of improving their practice (Kpttkamp, 1990; Osterman, 1990; Peters, 1991). Imel (1992) suggested that the use of reflective practice requires the individual to assume the perspective of an external observer. The basis for reflective practice was established in the works of Dewey, Lewin and Piaget (Imel, 1992). In a group setting, reflective practice could be used as a methodology to socialize tacit knowledge and create knowledge in the coalescent knowledge dimension.
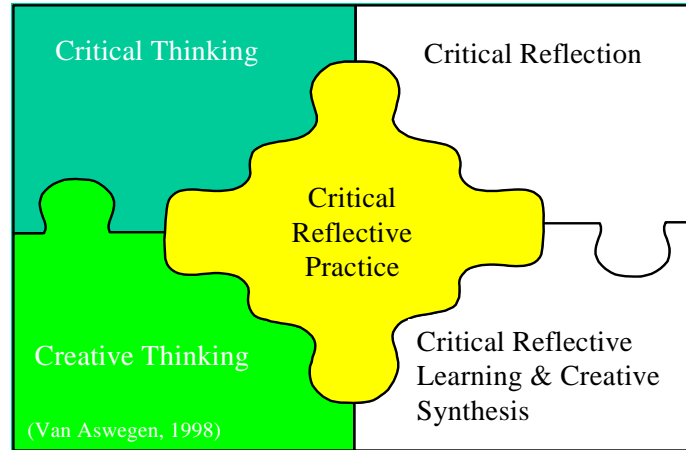
One of the classic management and quality control dilemmas is the Buggy Whip Manufactures. These manufactures failed to see the demise of their industry, with the acceptance of cars as a new mode of personal transportation. They just kept PLOCing along. Making their buggy whips better and better, but the customer demand just wasn't there. Their closed loop management process of Planning, Leading, Organizing and Controlling (PLOC) didn't permit them from see what with hindsight is obvious to us. Were they using thoughtful action? If yes, then would the change to reflective practice have permitted them the opportunity to migrate their business to support the new trend in personal transportation? Reflective practice focuses on improving the existing practice and provides a greater opportunity of getting the corrective action to the practice correct the first time. Therefore, the answer is NO.

If using reflective practice in their PLOCing process would not have ensured that they would have reacted to changes in the market place.

Would using reflective practice from a critical point of view have provided the PLOCing process with the information necessary to save the Buggy Whip business?

What is Critical Reflective Practice?

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Building Blocks for Critical Reflective Practice

Critical Thinking | Critical Reflection | Critical Reflective Practice | Creative Thinking | (Van Aswegen, 1998) | Critical Reflective Learning & Creative Synthesis

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Van Aswegen (1998), in her dissertation, defines the building blocks of critical reflective practice, which is presented in this graphic.

There are four building blocks:

       1. Critical Thinking

       2. Critical Reflection

       3. Creative Thinking

       4. Critical Reflective Learning & Creative Synthesis

Critical Reflective Practice

- Focus Inquiry
- Obtain a New Perspective on Existing Knowledge
- Produces Innovative Ideas
- Learning Results in Creative Synthesis (Consistency in Thought & Action)
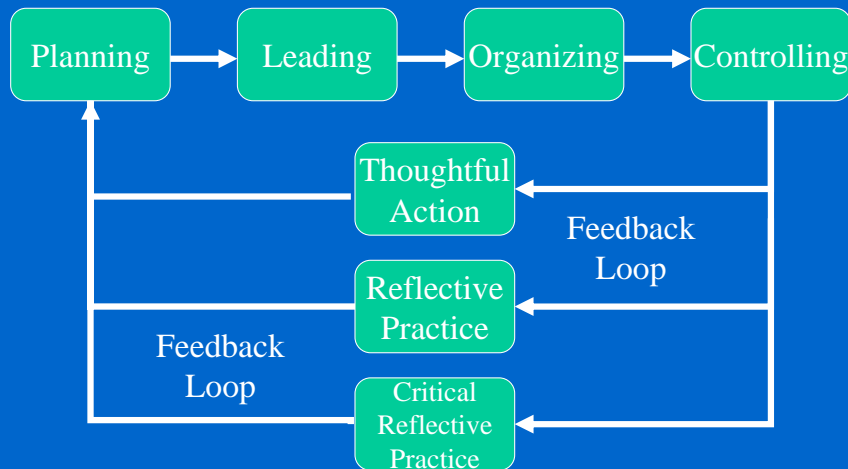
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In Summary, critical reflective practice focuses on the inquiry, obtains a new perspective on existing knowledge, produces innovated ideas, and learning results in creative synthesis (consistency in thought and action). The group/individual decides the worth, accuracy, and validity of new ways of thinking and practices, then integrates these into their planning and operating practices.

Therefore, the classical Management process feedback loop can be modified to include the following choices of method of evaluation of results :

1. Thoughtful Action – Is used when there is existing practice that is need to improve results, or no action is needed, or something needs to be done NOW even if it isn't the correct solution at this time. Sometimes called thinking on your feet.

2. Reflective Practice – Is used when the existing practice must be changed to improve results. The preference is to get the change right the first time.

3. Critical Reflective Practice – Is used when there is a need to establish new ways of thinking and practices in how service/products are delivered to the customer.

If Critical Reflective Practice was used in the Buggy Whip Manufactures example, they may have started diversifying their product line by manufacturing part for cars as well as manufacturing the best buggy whip in the country.

By adopting the critical reflective practice principles as defined by Van Aswegen (1998) to an open group dialogue format, management could focus the organization on creating new actionable knowledge associated with the processes that are used to create value for the business. Within this framework, the use of critical reflective practice by management in operational group processes (how work gets done in the organization) will create new actionable knowledge in the coalescent knowledge dimension. The effect of doing this will change the classical management process from four sub-processes to five: Planning, Organizing, Leading, Controlling, Critical Reflective Practice, and then Feedback to the Planning process.

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The Classic Management Process is implemented in various organization structures. The following is a list of some of the more popular structures used:

Functional – The most logical and basic form of departmentalization; It makes efficient use of specialized resources; Provides communities of practice by locating employees of the same or similar skill in the same department; slow response time to market conditions

Product/Service – Focuses on products/services; provides for fast change to market conditions; clearly defines responsibilities; permits in-depth competencies to decline

Hybrid – A combination of Functional and product/Service structures; Use the Functional structure for the older and more stable markets; use the Product/Service structure for newer and more unstable markets

Matrix – Each employee reports to both a functional and to a Project/Service/Product manager; Provide flexibility; stimulates interdisciplinary cooperation; encourages power struggles; may lead to more discussion than action

Horizontal – Relatively flat origination structure; Has a member that is designated as the leader; exist in some structures as an informal organization, members compensation can be an issue; requires a commitment by all members to accomplish the mission of the organization

According to Dr. Peter Lorange, President and member's leader of the International IMD (Institute for Management Development) located in Lausanne, Switzerland, IMD has been using the horizontal organization structure successfully for seven years. At IMD, all members of the horizontal organization are paid the same salary. The performance measurement system provides additional compensation based on the members accomplishment/contribution to the organizations mission (The 2nd International Conference on Management Consulting Conference in Lausanne, Switzerland, June 2004).

Organizational Structures:

- Provide Command and Control for the Leader/CEO
- No. of Levels are a Function of the Span of Control, Structure Type & Expense Level Required
- Are NOT the Path that Provides Value Added Products or Services to the Customer

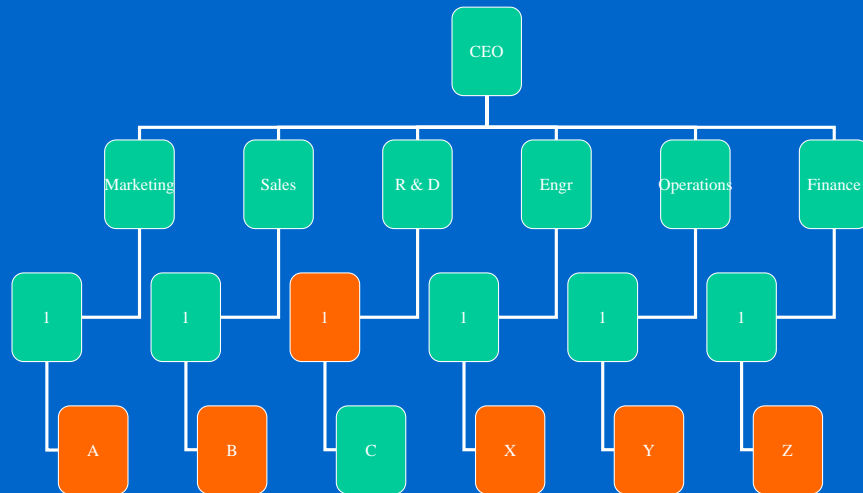Organizational structures provide for command and control by the leadership team. The number of levels in an organization is a function of spam of control, structure type, and expense level required. The organization structure is NOT the path that provides value added products or services to the customer.

An Organization Structure

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Here is an organizational structure that can be used as an example. In this example the marketing product/service manager A is responsible for the success a of specific product or service in the marketplace. The product/service manager needs the skills, knowledge sets, and resources of B in Sales, X in Engineering, Y in Operations and Z in Finance to be successful in the market place. The product/service manager also needs the resources of 1 in Research and Development, if changes need to be made to the product or service provided to the customer. In most cases, the product/service manager does NOT have direct control of these individuals. They report to their management structure, support other products/services, and only provide their services to the product/service manager. Let's identify these individuals as an operational group. The definition of an operational group is the collection of individuals that provide products or services to the customer. The individuals have processes that they use to deliver the product or services to the customer. In some cases these processes are identified and have process managers. Based on my experience in an organization that did process management so well that they won the coveted Malcolm Baldrige National Quality Award, processes for delivering service to the customers were managed in each functional area, but no one managed the overall delivery of services to the customer.

If the operational group processes in the target organization are not available, the management consultant will have to identify them. Accurately identifying these operational group processes may not be a trivial task.. The operational group processes can be found by using the Social Network Analysis tools. The application of these tools in the past has shown that communications and processes to accomplish work in an organization are a matrix structure, which crosses many boundaries of the formal organization (Stephenson, 2002; Krebs, Valdis, 1998; The Advisory Board Company, 1996).

Modified Classic Management Process
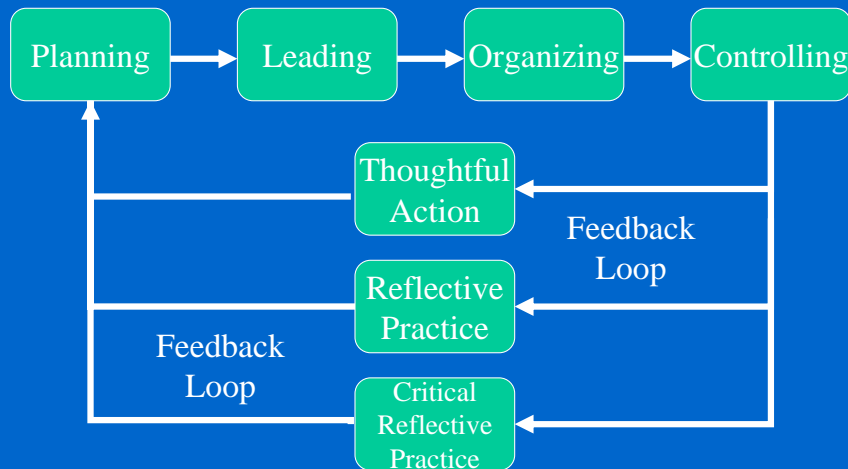
Once the operational group and their processes are identified, the members of the group should be given the management responsibility for the product or service that they are providing to the customer. The group must designate a team leader to exercise control of the classic modified management process. Thoughtful action should be used when existing practices that have been used successfully before will solve an issue. For other general issues, reflective practice should be used to decide on the practice required to resolve the issue by the operational group. For major issue and at least once a quarter, the critical reflective practice should be used. In all cases, an open group dialogue format which will take advantage of the knowledge creation model defined in this paper should be used. The focus in using this model in reflective and critical reflective practice should be to create new actionable knowledge in the Coalescent Knowledge dimension at the operational level of the organization. This actionable knowledge would be private. As the knowledge is used, it will develop into new group competencies. With private competencies providing value to the customer, the organization meets Porter's requirements for both achieving a competitive advantage and sustaining it. 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.

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Proposed Solution

Use the Modified Classic Management Process in Open Group Dialogue Format To Create Actionable Knowledge in the Coalescent Knowledge Dimension within the Processes used to Create Value for the Customer

The proposed solution Use the Modified Classic Management Process in Open Group Dialogue Format To Create Actionable Knowledge in the Coalescent Knowledge Dimension within the Processes used to Create Value for the Customer

Proposed Solution would:

- Create Private Actionable Knowledge
- Develop it into New Group Competencies
- Provide Additional Value to the Customer
- Meet Porter's Requirements for Creating a Competitive Advantage that is Sustainable

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The proposed solution would create actionable knowledge at the operational group level in the organization. This actionable knowledge would be private. As the knowledge is used, it will develop into new group competencies. With private competencies providing value to the customer, the organization meets Porter's requirements for both achieving a competitive advantage and sustaining it. 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.

The new actionable knowledge is created with the following attributes:

Visible, Expressible, & Shared

Private Group Knowledge

An Opportunity to Act as if the Group had One Mind

The Foundation for Creating New Competencies

In the Coalescent Knowledge Dimension

Creating New Competencies

Deft Groups (Groups that act as one mind)

More Effective in Creating Emerging Competencies at a Lower Cost, when Compared to Other Groups in Experiment - They were MORE Effective at a Statistical Correlation of 0.41 with a Significance level of 0.0001

(McGarth, MacMillian, and Verkataraman, 1995)

Also, the solution would decrease the cost of providing goods/services to the customer. 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 (actionable) and at a lower cost to the organization than other groups being measured. It should be noted that "deftness" does not imply that groups worked together, nor does it necessarily imply absence of conflict, high job satisfaction or high moral. Deftness represents the extent to which the process by which a group solves problems is effortless, effective, and well honed. Therefore, a group that is acting as one mind to create new competencies (from actionable knowledge) 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.

The following can be a check list for whether or not a competitive advantage has been created, since most author agree that they are required:

1. Fit of Activities must be Different from Competitors – The proposed solution does create competence that should be different from the competitors

2. Must be able to Create New Competencies – The proposed solution will create actionable knowledge that becomes competences as it is used

3. Competencies Grow when they are Applied – A better statement would have been actionable knowledge grows into competencies when they are applied

4. The Common Thread between Experts is Acting with One Mind - An underlining thread that links many strategic management experts together is the need to construct a strategy that will not only win in the marketplace but 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 & Porrras, 1996), (Pascale, Millieman, & Grogoja, 1997). Creating actionable knowledge in the Coalescent knowledge dimension facilitates the organization in acting as "ONE MIND" in the implementation of the organization's strategy.

Summary

- Knowledge Creation Model
- Classic Management Process
- Created Actionable Knowledge, which can become New Competencies
- Meet Porter's & Others Requirements for Building a Sustainable Competitive Advantage

We have looked at brief definitions of information, knowledge and covered the interaction of individuals in the proposed knowledge creation model.

We reviewed, applied some research, and modified the classic management process.

Some typical organization structures were reviewed to look for a location to implement the modified classic management process, the knowledge creation model, and create actionable knowledge, which will become new competencies providing the organization with a competitive advantage at the product or service level

The expected results of the proposal compared favorability to research related to competencies and the views of experts on some of the attributes required to create a competitive advantage.

Changes to the Nonaka & Takkeuchi (NK) Knowledge Creation Theory

Process/Mode	NK Knowledge Transition Form	New Knowledge Transition Form
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

(Morgan, Morabito, Merino, Reilly, 2001)

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Backup Slide for questions

Morgan, Morabito, Merino, and Reilly (2001) provide the following explanation of the creation of knowledge in the Coalescent knowledge dimension: "The first process in creating knowledge is the socialization. In this process, an individual shares his or 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 knowledge 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. The process has now created a shared virtual knowledge, which only exists between the individuals involved in the dialogue. This knowledge is shared and not codified, so it does not fall within the definition of tacit or explicit knowledge."