Knowledge Codification and Coordination

Connecting the Dots Between Strategy, Technology, and Implementation

WK-4
The Three Components of Knowledge Management:

- **Knowledge generation.**
  Includes all activities, which brings to light knowledge that is "new" to the individual, to the group, and to the organization.

- **Knowledge codification.**
  Representation of knowledge so that it can be "reused" either by an individual or an organization.

- **Knowledge transfer.**
  “Movement of knowledge from one location to another”. 
Knowledge Generation

• Involves intentional activities of an organization
  – To acquire new knowledge
  – To create new knowledge

• Techniques include
  – Buy or rent
  – Can hire ‘expert’ firm or individuals
  – Support external research, grants, consortia

• Value of intellectual capital, “fair price”
  – How to keep ‘purchased knowledge’ intact
  – Differences in culture make hard to assimilate
Knowledge Generation

– Research and Development
  • long time to get financial return
  • value depends on how effectively applied
    – Xerox – the problem child PARC
  • most knowledge generation from synthesis
    – combination of K from different sources
    – in unique ways
      • so that new ideas emerge
Knowledge Generation

– Shared Problem Solving
  • Leveraging diversity of people
  • different backgrounds
  • different cognitive styles
  • creative solutions
  • experience can constrain search for novel ideas

– “Creative abrasion”
  • people with diverse background
  • but a shared vision
  • come together to solve problems
Knowledge Generation

• Adaptation
  – External and internal threats
  – Force need to generate new knowledge
  – Apply existing resources in innovative and creative ways to rethink workflows, processes, business models
  – When core capabilities can become core rigidities
  – When best practices become worst practices
Knowledge Generation

– Communities of Practice

• Groups of workers who share common interests and objectives, but are not necessarily employed in the same dept/location (or firm), and who occupy different organizational roles
• Bonded by a common sense of purpose
• Shared interests in knowledge sharing
• Collaboration for new knowledge creation
• Collaborate F2F, or, by phone, by email and via online Internet/web communities
Knowledge Capture & Codification

- Knowledge generation needs to be channeled
  - Continuous processes of classifying, categorizing, scanning, filtering, organizing and packaging knowledge

- Codification is representation of K to make it easily accessible and transferable

- Knowledge accumulates and changes over time and so it is hard to “measure” in discrete units
- Subjective and Context sensitivity – DKI - ???
- Capturing and Coding go hand in hand – What is not coded is not accessible nor transferable

- D&P’s 4 basic principles for K codification
Knowledge Codification and Coordination

“Relevance is far more important than completeness”

- Tacit, explicit, codified, rich, poor
- Categorize, describe, map, model, simulate
- Principles of K Codification
  - Business goals, importance
  - Identify Existing K and goals
  - Usefulness and appropriateness
  - Medium for codification and distribution
Codifying and Mapping

“Tacit, complex knowledge, developed and internalized by the knower [over a long period of time], is almost impossible to reproduce in a document or database.”

- Tacit Knowledge – hitting baseball
- Tacit experience – how to K transfer
- Knowledge map – people, documents and databases
- K map is an inventory – HR skills etc
- K – a piece in every head
- Six Degrees of Separation
Case Studies of K Management

“... Clearly the value of the map was the quality and depth of information more than the bells and whistles of a sophisticated storage and retrieval system.”

- Time Researchers – K pools
- Microsoft’s Competencies and Training
- Technologies for Mapping Knowledge
  - Groove, Lotus Notes / Raven / Websphere, Peoplesoft, SAP, Restrac, Resumix
- 33 1/3 % Rule – IT vs. K Projects
- Politics of Mapping Knowledge
  - Map vs. Territory
- Dynamic modeling of Knowledge
Overview

Case Studies of K Management

- Weick’s sensemaking and aerial photographs – AI versus meaning making
- Embedded knowledge – M&A
- Deep Blue – how deep?
- Expert systems and AI – promises and hype
- Monsanto’s KM A – Tangible Patents as K
- K Taxonomies
Codification

What is the purpose of knowledge codification?
- To convert corporate knowledge into accessible and applicable formats
- 4 basic principles:
  - What business goals are to be served?
  - What knowledge exists in what form to accomplish the goals?
  - How can it best be codified for usefulness?
  - What is the appropriate medium for codification and distribution?
Knowledge capture and codification

• Capturing involves scanning, organizing and packaging knowledge
• Codification is representing knowledge in a manner that can easily be accessed
• **Principles of knowledge codification**
  – Define strategic intent
  – Identify existing knowledge
  – Evaluate existing knowledge for usefulness
  – Determine medium for codification and distribution
Knowledge Capture & Codification

• **Defining Strategic Intent**
  – Determine the business problem to be solved and align knowledge to be captured with business objectives

• **Identify & Evaluate Existing Knowledge**
  – Very difficult to determine knowledge requirements.
  – Subjective process raising political, cultural and strategic issues.
  – Different perspectives about content needs, and sources of “hard” and “soft” information (e.g., ideas, gossip and opinion).
Knowledge Capture & Codification

• Determining Appropriate Media
  – Media choice will vary with richness and complexity of the knowledge captured
  – Scanning: involves a combination of electronic and human approaches, and is usually the first step in capturing knowledge
  – Involves capturing info, filtering out redundant info, adding value via human input;
  – a team can be tasked, with scanning news wires, broadcasts, etc. and synthesizing info into a daily report
Knowledge Capture & Codification

Determining Appropriate Media

– Organizing: structures info in an accessible form
– Too much structure can hide info from employees whose mental models don’t match chosen structure – Andersen’s KXchange
– Four classifications
  • Process knowledge (e.g., best practices) that can increase efficiency
  • Factual knowledge easily documented but of little value unless synthesized and in context
  • Catalog knowledge shows where things are – People yellow pages
  • Cultural knowledge - cultural and political
Knowledge Capture & Codification

Determining Appropriate Media

- Knowledge Maps
  - Guides to where knowledge exists in an organization and an inventory of knowledge assets available
  - Several schemes to map knowledge
    - Physical mapping (IS architecture)
    - Qualitative mapping – points to information by topic rather than location
    - Process mapping – uses a generalized model of how a business functions to map knowledge
    - Functional mapping – loosely based on org. chart
    - Conceptual mapping – organize around objects, such as customers – hard to do
Knowledge Capture & Codification

Codifying Tacit Knowledge

• Narratives
  – A way to try to capture the tacit knowledge of experts
  – A story can communicate ideas and complex understanding of events
  – When knowledge is shared in a context shared by listeners it is more likely to be absorbed
  – Videotapes provide one way to share stories easily
Knowledge Transfer

• Four different modes of knowledge conversion
  – Socialization
  – Externalization
  – Combination
  – Internalization
Nonaka and Takeuchi (1995)

Tacit to Tacit – Socialization
Tacit to Explicit – Externalization
Explicit to Explicit – Combination
Explicit to Tacit - Internalization

FROM
Tacit
Explicit
TO
Tacit
Explicit

<table>
<thead>
<tr>
<th>Tacit</th>
<th>Explicit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socialization</td>
<td>Externalization</td>
</tr>
<tr>
<td>Internalization</td>
<td>Combination</td>
</tr>
</tbody>
</table>
Codification

Gives structure & permanence to otherwise nebulous forms of knowledge

Pros and Cons???

- Distinctiveness & its value
- Flexibility & adaptability to change – ‘Static’
Pros and Cons of Codification

- The more codifiable and teachable a capability is, the higher the risk of rapid transfer
- High level of “Technological competition” and fear of losing tech edge speeds transfer of capabilities.
- Characteristics of the manufacturing capability do not affect hazard rate.
- Imitation and transfer are not identical phenomena
- Key Employee turnover is significantly associated with faster imitation time
Knowledge Generation and Codification

• Knowledge generation
• Knowledge codification
• Knowledge transfer - spirals
• Tools
  – Data management tools- data warehouses, data search engines, data modeling, visualization
  – Information management tools - automated information search and retrieval agents, decision support technologies, executive information systems, document management technologies
  – Knowledge management

© Copyright 2002, Yogesh Malhotra, www.yogeshmalhotra.com, All Rights Reserved