Situation-Handling and Mental Models: Stories Drive People-Centered KM

Master Class

2004

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Master Class Rationale

All deliberate actions are guided by models – models of situations and of how to handle them.

To support performance, effective KM makes use of the best understanding of knowledge-related processes – such as the most relevant and reliable cognitive sciences results in the case of people.

This master class focuses on the role that stories play in learning and in structuring the mental reference models used for handling situations – by people and organizations.
Stories Provide Structure to Mental Models

It is always difficult to integrate separate knowledge and information objects into coherent wholes.

By engaging in conceptual blending, stories tie together concepts, judgments and other objects into mental spaces that provide meaningful structure, organization, and relationships.

Stories cover many abstraction levels: How-To, Know-That, Know-Why, Patterns and Metaphors.

Stories complement theories and principles.
Example:

The Manager Uses Incentives to Influence Employee Behavior to Achieve Enterprise Performance
Mental Reference Models Are Behind All Actions!

Desired Enterprise Performance → Mental Model of How Employee Behavior Influences Ent. Performance

Desired Employee Behavior → Mental Model of How Incentives Influence Employee Behavior

Incentives → Real Employee Reaction to Incentives

Actual Employee Behavior → Enterprise and Market Reaction to Employee Behaviors

Observed Employee Behavior

Measured and Observed Enterprise Performance
How Does the Manager Learn the Relations between Employee Behavior and Enterprise Performance?

♦ From personal experiences mostly remembered as stories but also generalized as meaningful relations

♦ By learning about and remembering stories of how people behaviors have influenced performance
  ✓ Best Practice stories
  ✓ Experiences related by other practitioners

♦ By studying business theory

♦ By formulating within her own mind cohesive understanding of how and why various incentives work – by building mental reference models
How Does the Manager Learn to Influence Employees?

♦ By learning about and remembering stories of how people have reacted to incentives
  ✓ Best Practice stories
  ✓ Experiences related by other practitioners
  ✓ Stories of personal experiences with incentives

♦ By studying HR, psychology, and business theory

♦ By formulating within her own mind cohesive understanding of how and why various incentives work – by building mental reference models
How Can Knowledge Management Strengthen the Manager’s Knowledge?

Examples of important knowledge:

- Judgment about which factors are important
- Understand market reactions to enterprise behaviors
- Understand people reactions to incentives
- Understand deployment of incentives

Examples of KM Approaches:

- Transfer employees to new roles
- Communities of Practice
- Use business simulations to build mental reference models for many different situations
- Apprenticing and Shadowing
Our Work Is Becoming More Complex

Frequency of Occurrences

1. Routine tasks (simple, repetitive, and well understood)
2. Logical or less common variations of Routine Situations
3. Complex, yet expected yet extensions of routines integrated with external factors
4. Unexpected challenges (conditions), but with a mix of routines and external factors
5. Totally unexpected situations and non-routine challenges, yet within the larger job scope
6. Unusual challenges outside job scope

Past Work
- Workers Need Additional Knowledge
- Considerable New Knowledge Is Required

Future Work
- Candidates for Intelligent Automation
- Required Knowledge Can Be Explicated (Some Can Be Automated)
- Some Abstract Knowledge Is Needed
- Workers Need Additional Knowledge
- Considerable New Knowledge Is Required

Complexity of Work

Potentials for Delivering Work Requiring Greater Knowledge
Most Decisions Are Nonconscious and Result from Activating Mental Reference Models!

Adapted from Bechara et alia, Science 28 Feb, 1997

When Needed, New Situation-Specific Mental Reference Models Are Created by Conceptual Blending
Strategic Action Models

Governing Principles Model
- Ethical and Judgmental Consideration
- Values, Goals, Expectations

General Approach Model
- General Behavioral Conduct
- Gestalt of Approach (Schema)

Specific Method Model
- Methodological Approach
- Specifics of Approach (Script)
  "Best Practices" Models

Operational Action Model
- Practical Detailed Approach
- Concrete Action Steps (Routines)
- Approaches to Engage Basic Mechanisms

People Imitate their Role Models!
Mental Reference Models

“Give me an example I can adapt to fit my problem!”

People Imitate Prior Behaviors and Organizations Reenact Past Practices

People making decisions, to the largest extent possible, rely on past experiences

People and organizations adapt and execute reference models to imitate prior successes and avoid prior failures

They build large libraries of reference behavior patterns
Mental Reference Models Are Stories

Stories, provide the basic structure and often the origin of mental reference models

It Is Always Hard to Grasp the Whole Coherently

Stories Are Unsurpassed for Effective Communication

We Rely on Stories to Tackle New Problems

Stories Help Us Learn Better

Stories and Mental Simulations
From Sensemaking to Effective Actions

**Personal Knowledge**
(Action-Oriented Operational and Governance IC Assets)

**Mental Reference Models** – Concepts – Understandings – Judgments – Principles – Facts

- Sensemaking
- Decision-Making/Problem-Solving
- Implementation

**Situation**

**Situational Awareness**

**Action Space and Innovation Capability**

**Execution Capability**

**Governance Competence and Perspectives**

- Information
- Understanding of Situation
- Decision
- Feedback
- Corrective Adjustment
- Actions to Change Situation
Situations Are Mostly Dynamic
Sensemaking Reference Models

Situation Recognition reference models to:

- Analyze, verify and validate the incoming information that describes the situation
- Maintain situational awareness to ascertain that the situation is considered in its relevant context
- Create reliable understanding of the situation
- Communicate understanding to Decision-Making/Problem-Solving
This large library of reference models ranges from concrete action models, scripts, abstract schemata, to metaknowledge models and are used to:

- Assess if routine or novel approaches are pertinent for handling the situation
- Innovate, create and explore effective and desirable action-options to handle the situation
- Evaluate the potential implications of the created Action-Options relative to situation objectives and Implementation feasibility
- Communicate Action-Option to Implementation
Implementation Reference Models

*Execution Method* reference models are used to:

- Interpret and understand the *Action-Option* intents and how to implement it effectively
- Plan and manage the *Implementation* process
- Secure and manage required resources
- Improvise and innovate to adjust *Implementation* to actual conditions
Monitoring Reference Models

Governance Approach reference models to:

- Ascertain that *Situation-Handling* is performed to fulfill context and enterprise objectives best possible

- Help the process become the most effective possible in spite of limited information, limited knowledge, changing conditions, lacking motivation, and all other obstacles
Effective Actions Are Needed at All Levels

- Make Sense
- Decide & Innovate
- Execute
- Monitor

1. Enterprise Strategy Level
2. Division Business Plan Level
3. Department Tactics Level
4. Personal Operations Level

Apply Knowledge
Missing Mental Reference Models

Lead to:

♦ Focus on first-order and short-term results while disregarding long-term implications

♦ Delays and procrastination when people are uncertain about how to proceed

♦ Misunderstandings and frustrations when people do not share insights and perspectives

♦ Work errors and costly mistakes when people lack the requisite expertise

♦ Dissatisfied customers who are not understood well
Remember:
Most Scientific Knowledge Is Built from Observations of Real-Life Events that Initially May Be Represented by Stories

Insights – including new perspectives that lead to further study and research – are typically noted or discovered when “something” happens.

A story is established when “that” happens

And it is the story that is remembered and told
Stories are the normal and most effective way of providing the context, structure, real meaning, metaphors and overall understanding of complex topic areas – and their relations to other parts of the system in which they exist.

Hence, stories – the portrayals of actors, the telling of conflicts and relationships, the illumination of objectives and drives, the identification of threats and opportunities, and all the other aspects of interesting situations – are interesting and difficult but ever so important!
Thank You!
Additional Slides
Individual Actions
Build
Corporate Behavior and Performance

♦ Our customers must experience uniformly helpful and innovative behavior from all parts of our company.

♦ They must obtain competitive benefits from their relationships with us.
Small Actions Lead to Broad Behavior

Innumerable Nano Actions

R&D-Marketing

Micro "Action"

Effects of Actions

Engineering

Micro "Action"

Effects of Actions

Manufacturing

Micro "Action"

Delivery & Start-Up

Consolidated Enterprise Behavior

Market and Stakeholder Response

Costs, Service Quality, Product Quality, Customer Support, etc.

Realized Performance

Effects of Actions
Knowledge & Information Are Different!

Knowledge Management of Intellectual Capital

Tacit & Explicit Knowledge

Intellectual Capital

Decision Followed by Actions

Knowledge Required to Perform Activity

Detail Activity or Business Tasks

Knowledge Bases (KB)

IT-Based Knowledge Management

Data & Information System Building Blocks

Information Management of Information Capital

Information Management of Intellectual Capital

General Information Items Required to Perform Business Tasks

Detailed Information Items Required

Today's Company Picture

Order Book & Backlog

Customer Requirements

Detailed Product Information

Plant Schedules

R&D Schedules

Corporate Strategy & Direction

Customer Orders & Market & Economic Situation

Market Trends & Forces

Company & Plant Situation & Conditions

Technical Developments etc.

Cumulated Operating & Performance History

Knowledge Bases (KB)

Knowledge Discovery in Data Bases (KDD)

Knowledge / IT Apps

IT-Based Knowledge Management

Detail Business Functions

Activity

New Knowledge Created during Work

Critical Thinking for Unexpected Situations

Process Operations Economics

R&D Capabilities

Cost-Benefit Analysis

Communicate Effectively

Adhesive Behaviors in Extreme Conditions

Understand Customer Situations

Diagnose Customer Application Problems

Identify "Best-Fit" Products for Applications

Educate Customers in Complex Applications

Work with Customers' Customers to Establish Needs

Work with R&D to Explore New Products

Analyze New Product Cost/Schedule Opportunities

Implement Argyll Strategy Intents

New Customer Service • Application Support • Create New Product Opportunities • Educate Customers

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Metastrategic Knowing

Metaknowledge

Topic Knowledge
Methodology
Domain

Primary Work Domain

Enterprise Navigation Domain

World Understanding Domain
Topic Knowledge at Five Conceptual Levels

- Work Domain -

General Principles
Insurance Business
Risks

Schemata
Conceptualize
Situation

Scripts
Underwriting
Procedures

Operational Models
Evaluating Risk
Calculating Impacts

Routine / Rote Actions
Obtain Facts
Complete Forms

Working Knowledge
We Possess Knowledge in Many Domains

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Metaknowledge Has Many Elements

Metastrategic Knowing
- Metastrategic Knowledge about Strategies to Address Task Goals
- Metatask Knowledge about Task Goals
- Metacognitive Knowing Metaknowledge about Declarative Knowing

Procedural Metaknowledge
"Know How"
Knowing Strategies for How to Proceed

Declarative Metaknowledge
"Know What"
Knowing What Is Known
Examples of Comprehensive Knowledge

Metastrategic Knowing

- Metastrategic Knowledge about Strategies to Address Task Goals
- Metatask Knowledge about Task Goals
- Metacognitive Knowing Metaknowledge about Declarative Knowing

Procedural Metaknowledge "Know How"
Knowing Strategies for How to Proceed

Declarative Metaknowledge "Know What"
Knowing What Is Known

Metaknowledge

Topic Knowledge
Methodology Domain
- General Principles
- Risk Evaluation Methodologies
- Schemata
- Critical Thinking Strategies
- Scripts
- Critical Thinking Strategies
- Operational Models
- Evaluating Risk Calculating Impacts
- Routine / Rote Actions
- Obtain Facts Complete Forms

Topic Knowledge
Work Domain
- General Principles
- Insurance Business Risks
- Schemata
- Conceptualize Situation
- Scripts
- Underwriting Procedures
- Operational Models
- Evaluating Risk Calculating Impacts
- Routine / Rote Actions
- Obtain Facts Complete Forms

Topic Knowledge
Enterprise Navigation
- General Principles
- Social Conduct Business Operations
- Schemata
- Identify Out-of-Scope Challenges
- Scripts
- Methods for Seeking Assistance
- Operational Models
- Collaborating Incorporate Advice
- Routine / Rote Actions
- Access Expert Network

Topic Knowledge
General Principles Society Environment
- Schemata
- Create Gestalt of Case
- Scripts
- Relating Case to World-at-Large
- Operational Models
- Identify Public Information Sources
- Routine / Rote Actions
- Access Public Agencies

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