6 Capturing Tacit Knowledge

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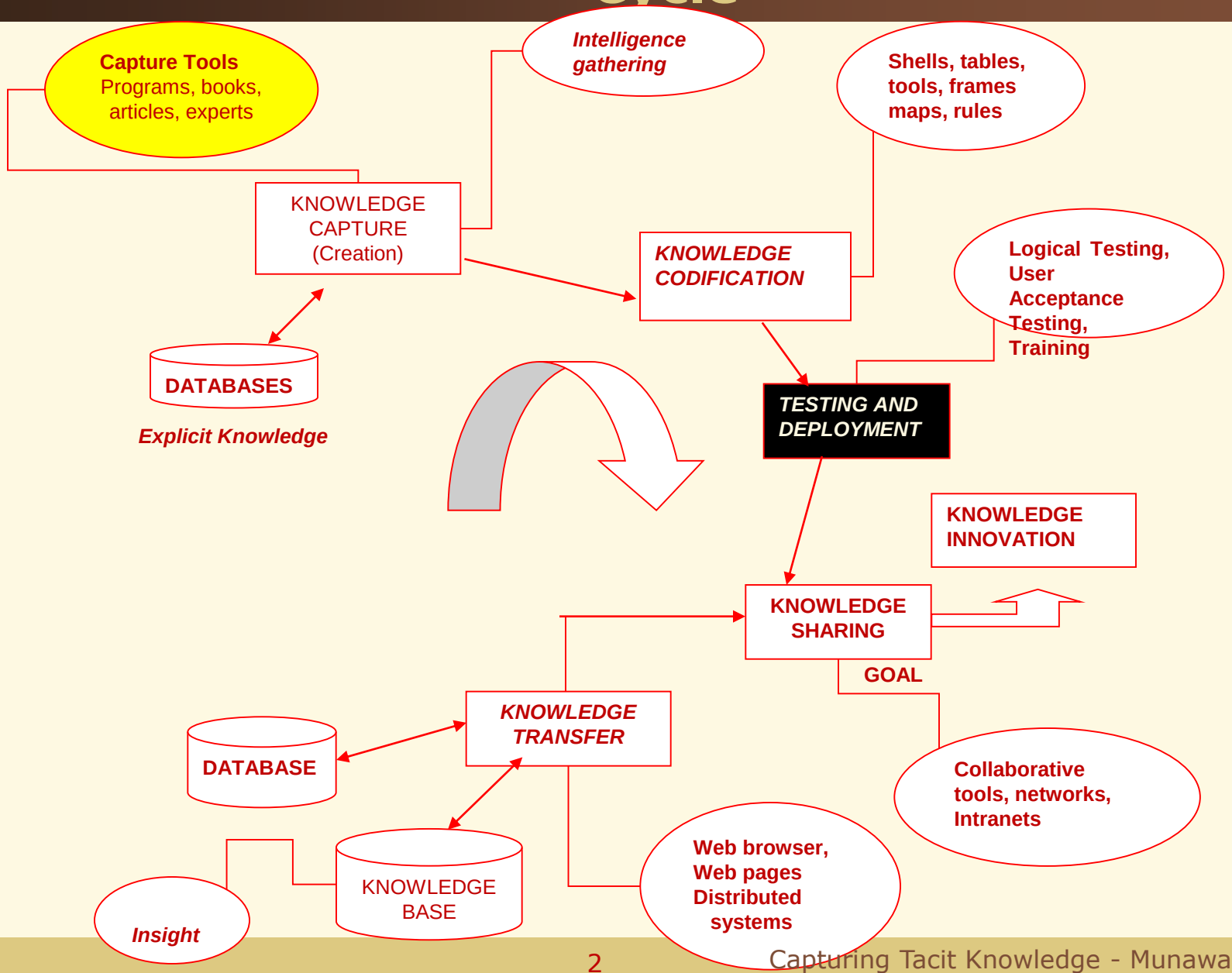
Knowledge Codification in the KM System Life Cycle



What Is Knowledge Capture ?

- Transfer of problem-solving expertise from some knowledge source to a repository or a program
- A process by which the expert's thoughts and experiences are captured
- Includes capturing knowledge from other sources such as books, technical manuscripts, etc.
- A knowledge developer collaborates with an expert to convert expertise into a coded program
- Knowing how experts know what they know

Improving the Knowledge Capture Process

- Knowledge developers should focus on how experts approach a problem
- Look beyond the facts or the heuristics
- Re-evaluate how well knowledge developers understand the problem domain and how accurately they are modeling it

Indicators of Expertise

- Peers regard expert's decisions good decisions
- Every time there is a problem, the expert is consulted
- Expert sticks to the facts and works with a focus
- Expert has a knack for explaining things
- Expert exhibits an exceptional quality in explanations

Expert's Qualifications

- Knows when to follow hunches
- Sees big picture
- Possesses good communication skills
- Tolerates stress
- Thinks creatively
- Exhibits self-confidence
- Maintains credibility
- Operates within a schema-driven orientation
- Uses chunked knowledge
- Generates motivation and enthusiasm
- Shares expertise willingly
- Emulates a good teacher's habits

Pros and Cons of Using a Single Expert

Advantages:

- Ideal when building a simple KM system
- A problem in a restricted domain
- Facilitates the logistics aspect of coordinating arrangements for knowledge capture
- Problem-related or personal conflicts are easier to resolve
- Shares more confidentiality with project-related information than does multiple expert

Pros and Cons of Using a Single Expert (cont'd)

Drawbacks:

- The expert's knowledge is not easy to capture
- Single experts provide a single line of reasoning, which makes it difficult to evoke in-depth discussion of the domain
- Single experts more likely to change scheduled meetings than experts who are part of a team
- Expert knowledge is sometimes dispersed

Pros and Cons of Using Multiple Experts

Advantages

- Complex problem domains benefit from the expertise of more than one expert
- Working with multiple experts stimulates interaction
- Listening to a variety of views allows knowledge developer to consider alternative ways of representing knowledge
- Formal meetings frequently a better environment for generating thoughtful contributions

Pros and Cons of Using Multiple Experts (cont'd)

Drawbacks:

- Scheduling difficulties
- Disagreements frequently occur among experts
- Confidentiality issues
- Requires more than one knowledge developer
- Process loss in determining a solution

Developing a Relationship With Experts

- Create the right impression
- Do not underestimate the expert's experience
- Prepare well for the session
- Decide where to hold the session

Styles of expert's expressions

- Procedure type—methodical approach to the solution
- Storyteller—focuses on the content of the domain at the expense of the solution
- Godfather—compulsion to take over the session
- Salesperson—spends most of the time explaining his or her solution is the best

Approaching Multiple Experts

- Individual approach—holding a session with one expert at a time
- Primary and secondary experts—start with the senior expert first, on down to others in the hierarchy. Alternatively, start bottom up for verification and authentication of knowledge gathered
- Small groups approach—experts gathered in one place to provide a pool of information. Each expert tested against expertise of others in the group

Analogies and Uncertainties In Information

- Experts use analogies to explain events
- An expert's knowledge is the ability to take uncertain information and use a plausible line of reasoning to clarify the fuzzy details
- Understanding experience. Knowledge in cognitive psychology is helpful background
- Language problem. Reliable knowledge capture requires understanding and interpreting expert's verbal description of information, heuristics, and so on

The Interview As a Tool

- Commonly used in the early stages of tacit knowledge capture
- The voluntary nature of the interview is important
- Major benefit is behavioral analysis
- Interviewing as a tool requires training and preparation
- Great tool for eliciting information about complex subjects
- Convenient tool for evaluating the validity of information acquired

Types of Interviews

- Structured: Questions and responses are definitive. Used when specific information is sought
- Semistructured: Predefined questions are asked but allow expert some freedom in expressing the answers
- Unstructured: Neither the questions nor their responses specified in advance. Used when exploring an issue

Variations of Structured Questions

- Multiple-choice questions offer specific choices, faster tabulation, and less bias by the way answers are ordered
- Dichotomous (yes/no) questions are a special type of multiple-choice question
- Ranking scale questions ask expert to arrange items in a list in order of their important or preference

Guide to a Successful Interview

- Set the stage and establish rapport
- Properly phrase the questions
- Question construction is important
- Listen closely and avoid arguments
- Evaluate session outcomes

Things to Avoid

- Taping a session without advance permission from the expert
- Converting the interview into an interrogation
- Interrupting the expert
- Asking questions that put the domain expert on the defensive
- Losing control of the session
- Pretending to understand an explanation when you actually don’t
- Promising something that cannot be delivered
- Bring items not on the agenda

Sources of Error that Reduce Information Reliability

- Expert's perceptual slant
- Expert's failure to remember just what happened
- Expert's fear of the unknown
- Communication problems
- Role bias

Errors Made by the Knowledge Developer

- Age effect
- Race effect
- Gender effect

Problems Encountered During the Interview

- Response bias
- Inconsistency
- Communication difficulties
- Hostile attitude
- Standardized questions
- Lengthy questions
- Long interview

Issues to Assess

- How would one elicit knowledge from experts who cannot say what they mean or mean what they say?
- What does one say or do when the expert says, "Look, I work with shades of gray reasoning. I simply look at the problem and decide. Don't ask me why or how."
- How does one set up the problem domain when one has only a general idea of what it should be?
- What does one do if the relationship with the domain expert turns out to be difficult?
- What happens if the expert dislikes the knowledge developer?

Questions for Discussion

- Do you think knowledge capture can be fully or easily automated? Why or why not?
- If you were asked to select an expert, how would you proceed? What characteristics would you look for? What other factors would you consider?

Thank You !

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