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Knowledge Testing & Deployment

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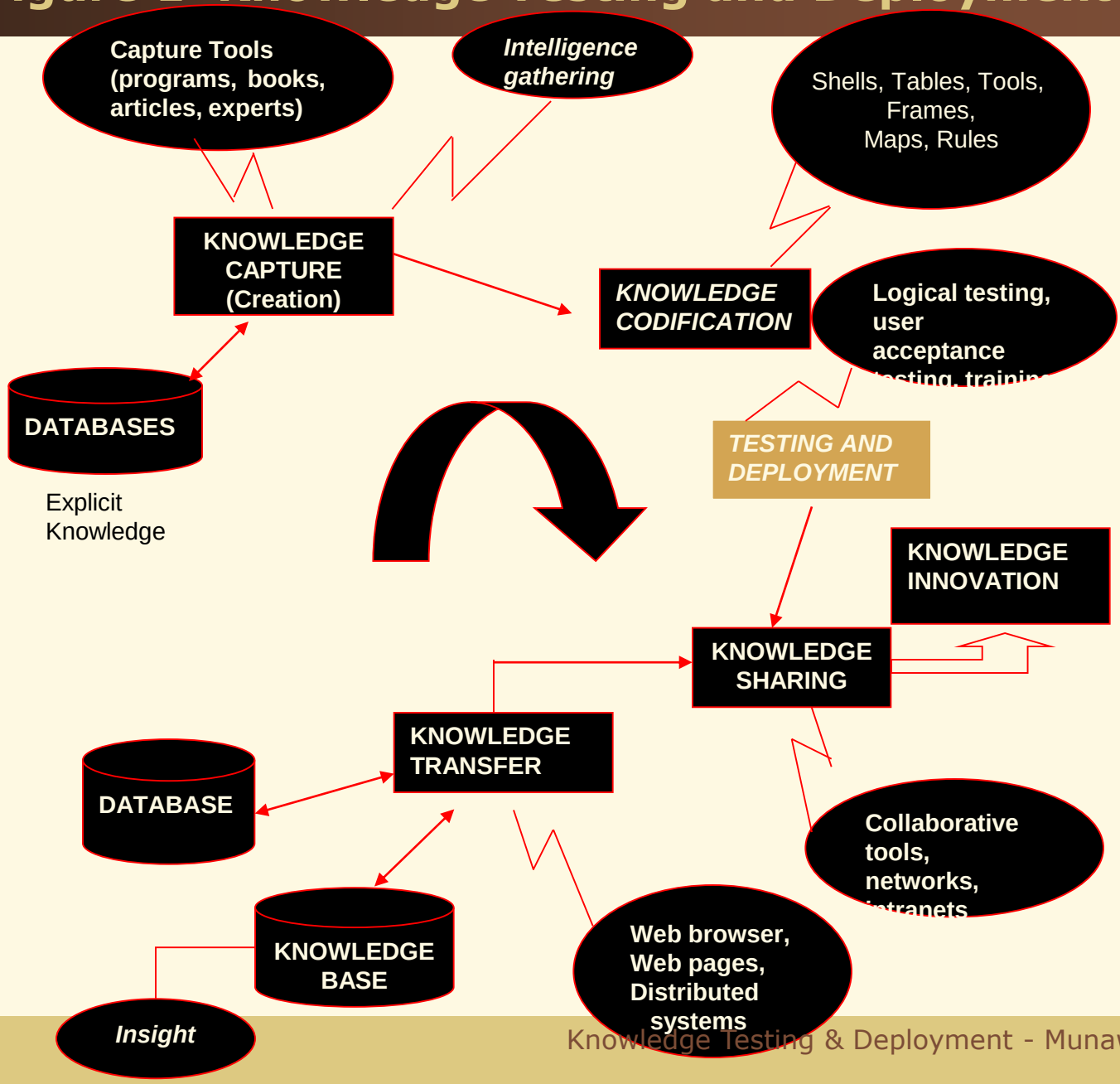
Figure 1 Knowledge Testing and Deployment



Key Definitions

- Logical testing answers the question, "Are we building the system right?"
- User acceptance testing checks the system's behavior in a realistic environment. Answers the question, "Have we built the right system?"
- Deployment refers to the physical transfer of the technology to the organization's operating unit

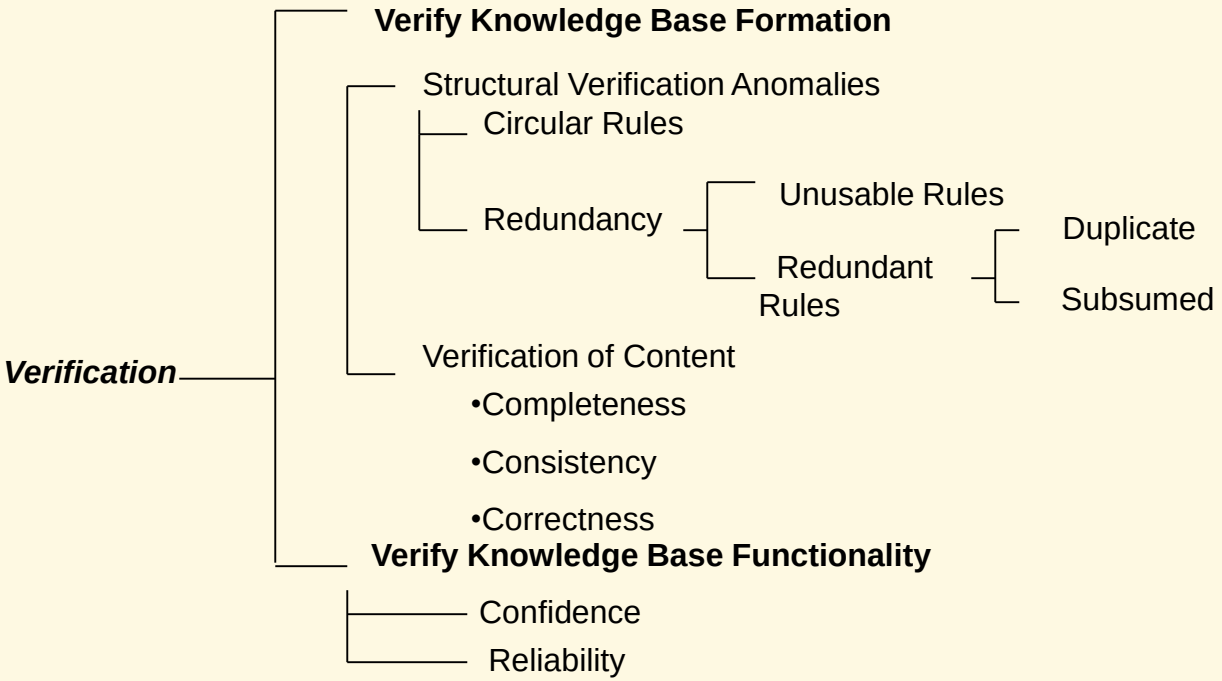
Issues to Consider in Testing

- Subjective nature of tacit knowledge. Intelligence difficult to measure
- Lack of reliable specifications make knowledge-based testing arbitrary
- Problem of establishing consistency and correctness
- Negligence in testing
- Lack of time for system testing
- Complexity of user interfaces

Attributes in Logical Testing

- Circular
- Completeness
- Confidence
- Correctness
- Consistency/inconsistency
- Redundancy
- Reliability
- Subsumption error

Approaches to Logical Testing



Key Testing Errors

- Circular errors tend to be contradictory in meaning or logic
- Redundancy errors offer different approaches to the same problem; duplication of knowledge
- Unusable knowledge is knowledge that comes up if the conditions succeed or fail
- Subsumption errors in rules, if one rule is true, one knows the second rule is always true
- Inconsistent knowledge, where the same inputs yield different results

Steps in User Acceptance Testing

- Select a person or a team for testing
- Decide on user acceptance test criteria
- Develop a set of test cases unique to the system
- Maintain a log on various versions of the tests and test results
- Field-test the system

Select Criteria for User Acceptance Testing

- Accuracy and correctness of outcome
- Adaptability to changing situations
- Adequacy of the solutions
- Appeal and usability of the system
- Ease of use
- Face validity or credibility
- Performance based on expectations
- Robustness
- Technical/operational test

Managing the Testing Phase

- Decide when, what, how, and where to evaluate the knowledge base
- Decide who should do the logical and user acceptance testing
- Draft a set of evaluation criteria in advance
- Decide what should be recorded during the test
- Review training cases, whether they are provided by the expert, the knowledge developer, or the user
- Test all rules for Type I and Type II errors

Issues Related to Deployment

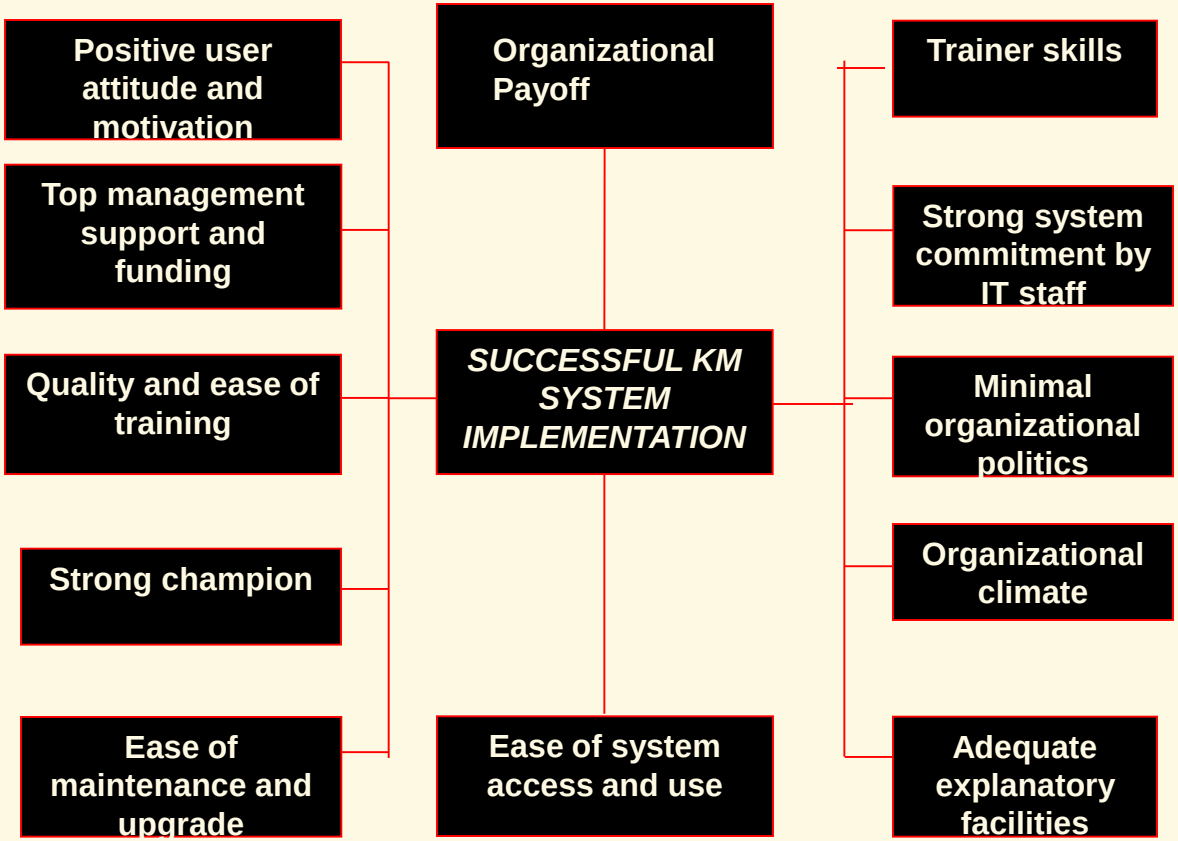
- Selection of the knowledge base problem
- Ease of understanding the KM System
- Knowledge transfer
- Integration alternatives
- The issue of maintenance
- Organizational factors

Selection of the Knowledge Base Problem

System success may be assured if:

- User has prior experience with computer applications
- User has been involved in the building of the KM system
- Payoff from the KM system is high and measurable
- KM system can be implemented without much difficulty
- Champion has been supporting the system all along

Success Factors in KM System Development



Integration Alternatives

- Technical integration through the company's LAN or existing information system infrastructure
- Knowledge-sharing integration when the KM system is usable company-wide
- Decision-making flow integration when the system matches the user's style of thinking
- Workflow reengineering when the KM system triggers changes in the workplace

Organizational Factors

- Top management support
- Support of the work of the champion
- Ensure a clean and supportive organizational climate
- De-emphasize role of politics
- Knowledge developer should remain neutral within the political arena
- Return on investment

User Training and Deployment

- Preparing for KM system training via advance demos and easy to follow training
- Combating resistance to change
- Watch for knowledge hoarders
- Watch for troublemakers and narrow-minded “superstars”
- Look for resistance via projection, avoidance, and aggression

Post Implementation Review

- Watch for quality of decision making
- Reassess attitude of end users
- Review cost of knowledge processing
- Revisit change in accuracy and timeliness of decision making

Question for Discussion

Implementing the Real-estate Advisor

In November 2000, a real-estate firm expressed interest in a KM system to train new agents and advise senior ones on the best match between a prospective homeowner and the available homes in the area. The firm has fourteen offices in eight major cities in the Commonwealth of Virginia. A contract was drawn to do the work with deployment by mid October.

The resulting knowledge base consisted of 165 rules involving seventeen parameters. Testing the package took two months before it was ready for deployment. The first step was to meet with two volunteer agents from the main office to demonstrate what the system could do and how easy it was to use. They asked how long it would take. The reply was "three to four hours total." They suggested a meeting with the knowledge developer the following Sunday to give the system a try.

Sunday morning, the two real-estate agents came on time and were anxious to see what the KM system could do to improve their sales potential. After two hours of practice, they began to make suggestions about expanding the system to include variables that had not been raised before. For example, they wanted the system to ask if the prospective buyer would object to living in integrated neighborhoods, whether the buyer had transportation to and from work, etc.

Question for Discussion

The result of the three-hour session was frustration. The agents were courteous, but did not indicate they would use the system. Since they worked on commission, there were under no immediate obligation to try it.

A strategy meeting with the president of the firm led to the decision to hold a session with the eleven real-estate agents the following week and discuss the deployment plan. During the one-hour session, several questions were raised regarding the system's capabilities and how it was built. Luckily, the single most experienced agent used in building the system was a highly respected agent with 18 years of successful experience. The expert was there and offered his opinion of the system.

Suddenly the president cut into the discussion and said, "Look, we can beat the system over the head and still not agree on a direction. I have an idea for you to consider. Why don't you give this system a try and after you feel you have a handle on the way it works, see if it can help you match a buyer with the right house. I am willing to increase anyone's commission from 50 percent to 60 percent for every documented match that results in a sale. I am willing to do this for 90 days."

Question for Discussion

By the end of the session, six out of the eleven agents underwent a one-day training at company expense. That was in February 2001. By June there, 46 successful matches had been made that resulted in 38 documented sales.

The word got around to the branches regarding the usefulness of the Real-estate Profiler. During the succeeding five months, a number of suggestions were incorporated into the system under a maintenance agreement with the firm. In December 2001, the system became available to the branches under the 60 percent commission plan. Training became easier, as more agents expressed interest in the system.

Questions

a. Evaluate the approach used in deploying the Real-estate Profiler.

b. Should one expect changes in the system to take place during deployment? What went wrong, if anything? Explain.

c. In what other ways might this system have been deployed? Elaborate.

Thank You !

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