

Knowledge Management

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IT 383
Knowledge Management

Lecture 1



Introduction to Knowledge Management

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Chapter

01

Introduction to Knowledge Management



Knowledge: It is a **high-value form of information** that is ready to apply to decisions and actions.



Chapter Objectives

- 
- Define knowledge.
 - Understanding knowledge management.
 - Identify knowledge types.
 - Understanding Nonaka's model.
 - Understanding the difference between IM and KM.
 - Understanding the learning organization and organization culture.

➤ What is knowledge?

➤ **Data:** Unorganized and unprocessed facts.

Example; Omar is 185 cm tall, (this data does not lead anywhere).

➤ **Information:** Organized and processed data.

Example; Omar is suitable for the basketball team.

➤ **Knowledge:** Information combined with experience.

It is a **high-value form of information** that is ready to apply to decisions and actions.

Example; height is good enough to play the guard positions in basketball team.

➤ **Knowledge:**

It is an accumulation of **facts**, **procedural rules** and **heuristics**.

➤ **Fact;** statement of some element of truth about a subject or a domain.
Example; Milk is white & sun sets in the west.

➤ **Procedural rule;** rule that describes a sequence of relations relative to domain. **Example;** Check your car before driving, if the gas gauge indicates less than a quarter of a tank then look for a gas station.

➤ **Heuristics;** a rule based on years of experience. **Example;** If a person drives no more than 5 kilometers above the speed limit, then that person is not likely to be stopped for speeding.

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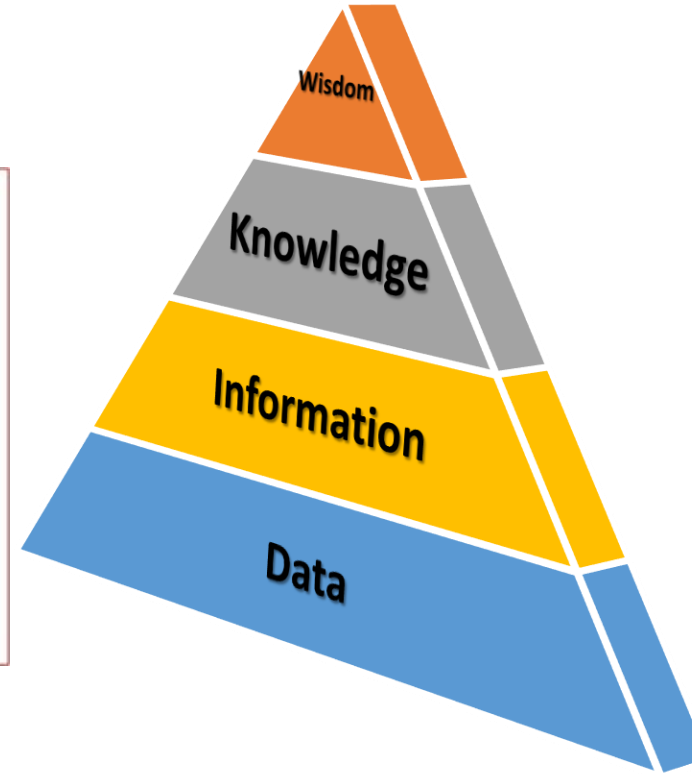
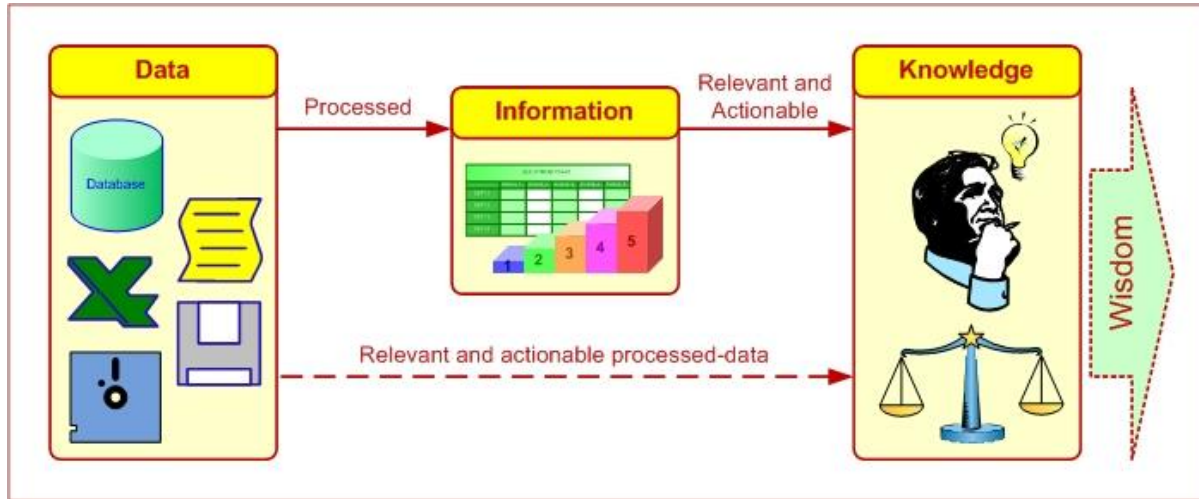
➤ Knowledge is:

➤ Information that is **contextual, relevant, and actionable**.

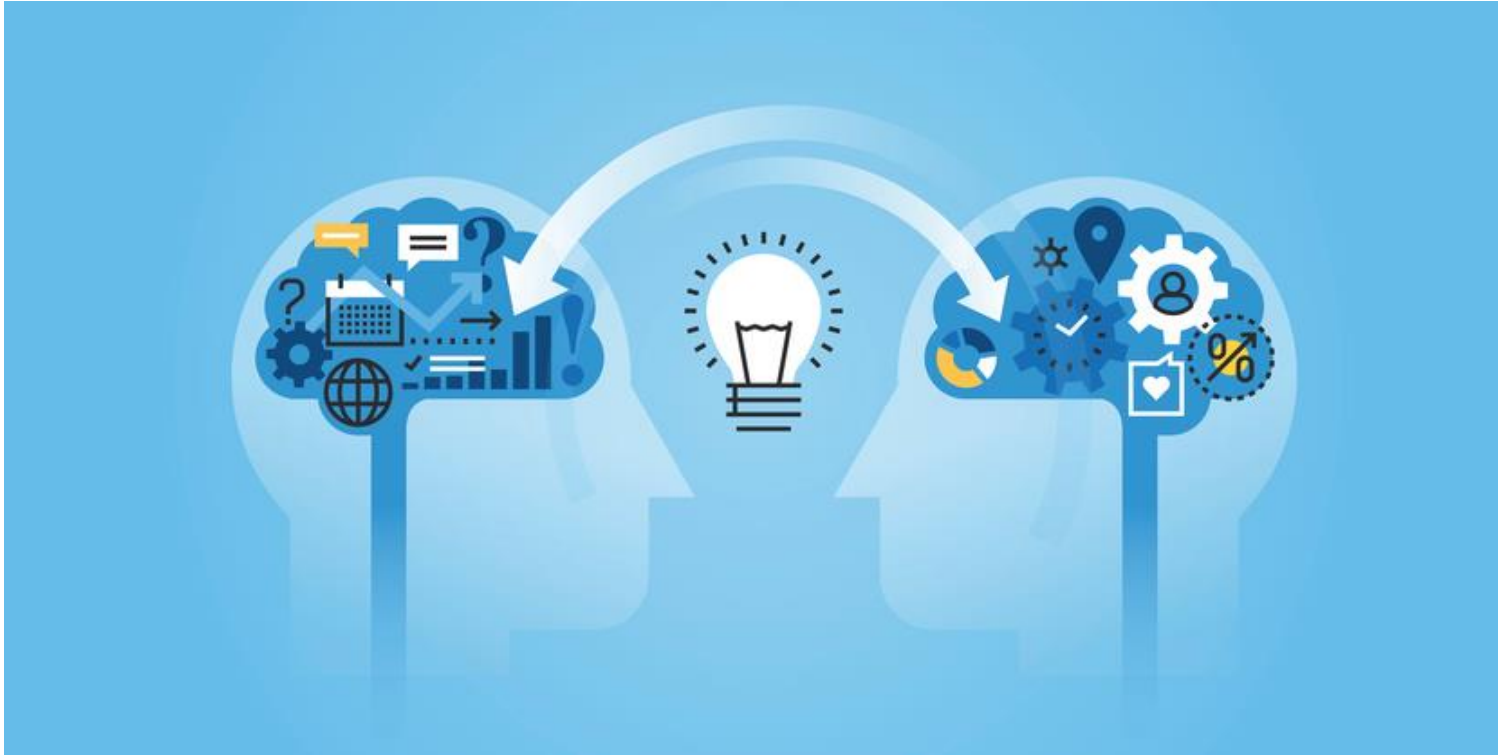
➤ **Understanding, or awareness** acquired through education or experience.

➤ Anything that has been **learned, perceived, discovered, inferred, or understood**.

Introduction to Knowledge Management



“Knowledge is information in action”



- **50% of our workers are retiring in the next five years and we must come up with methods to capture their knowledge before they leave.**

➤ **What is the knowledge management?**

Knowledge management (KM) is the process of identify, capturing, storing, developing, and sharing knowledge within the organization level to enhance its performance.

➤ **The goal of the knowledge management:**

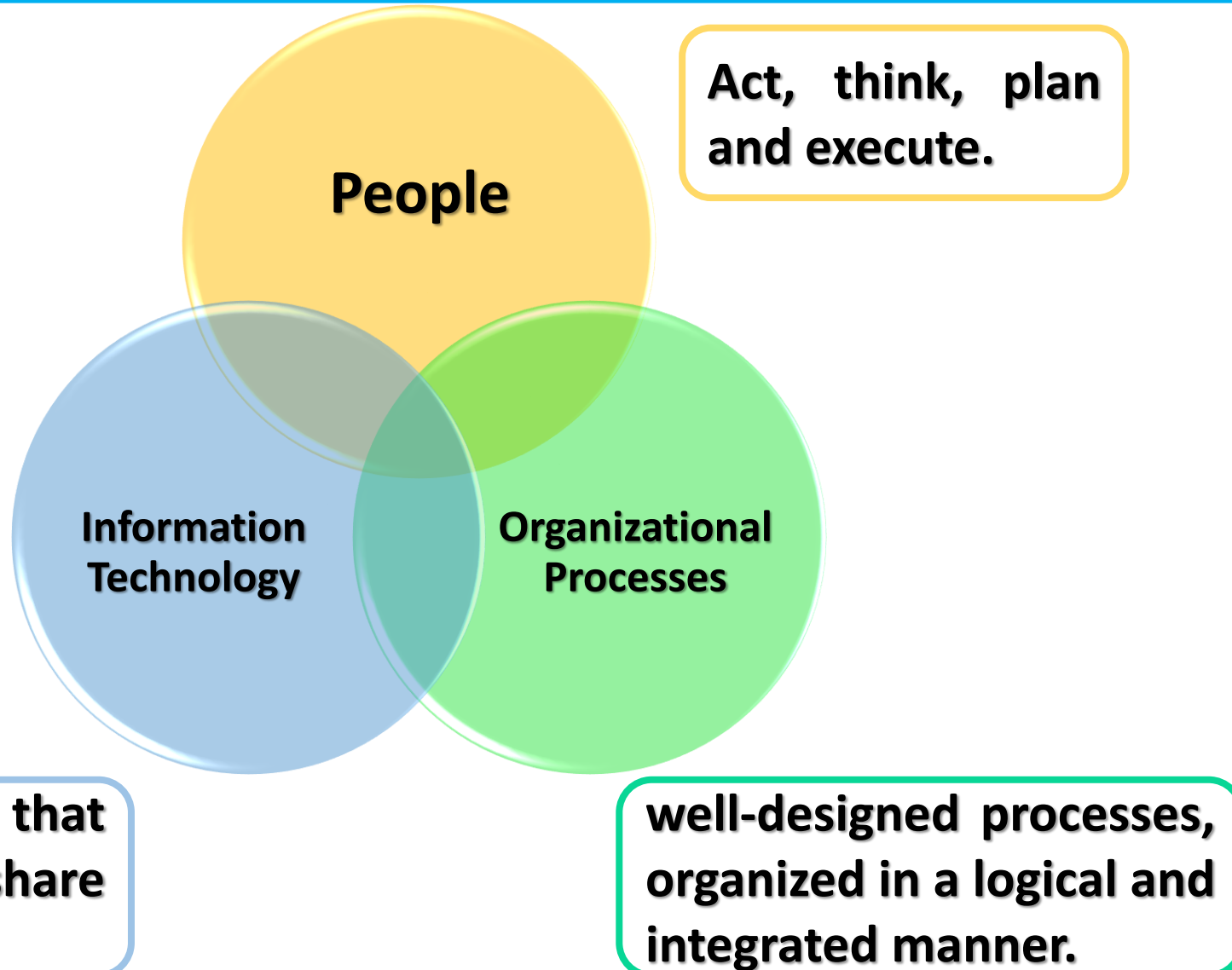
If we need to reduce cost;

- ✓ Increase revenue;
- ✓ Lead and reshape the industry;
- ✓ Improve performance;
- ✓ Stand out of the competitors.

➤ **Intellectual capital:**

The invaluable knowledge of an organization's employees.

Introduction to Knowledge Management



Knowledge Type

➤ **Explicit knowledge:**

Codified Knowledge found in books, documents, reports, database, etc.

➤ **Knowledge that deals with objective, rational, and technical material (data, policies, procedures, software, documents, etc.)**

➤ **Easily documented, transferred, taught and learned.**

➤ **Tacit knowledge:**

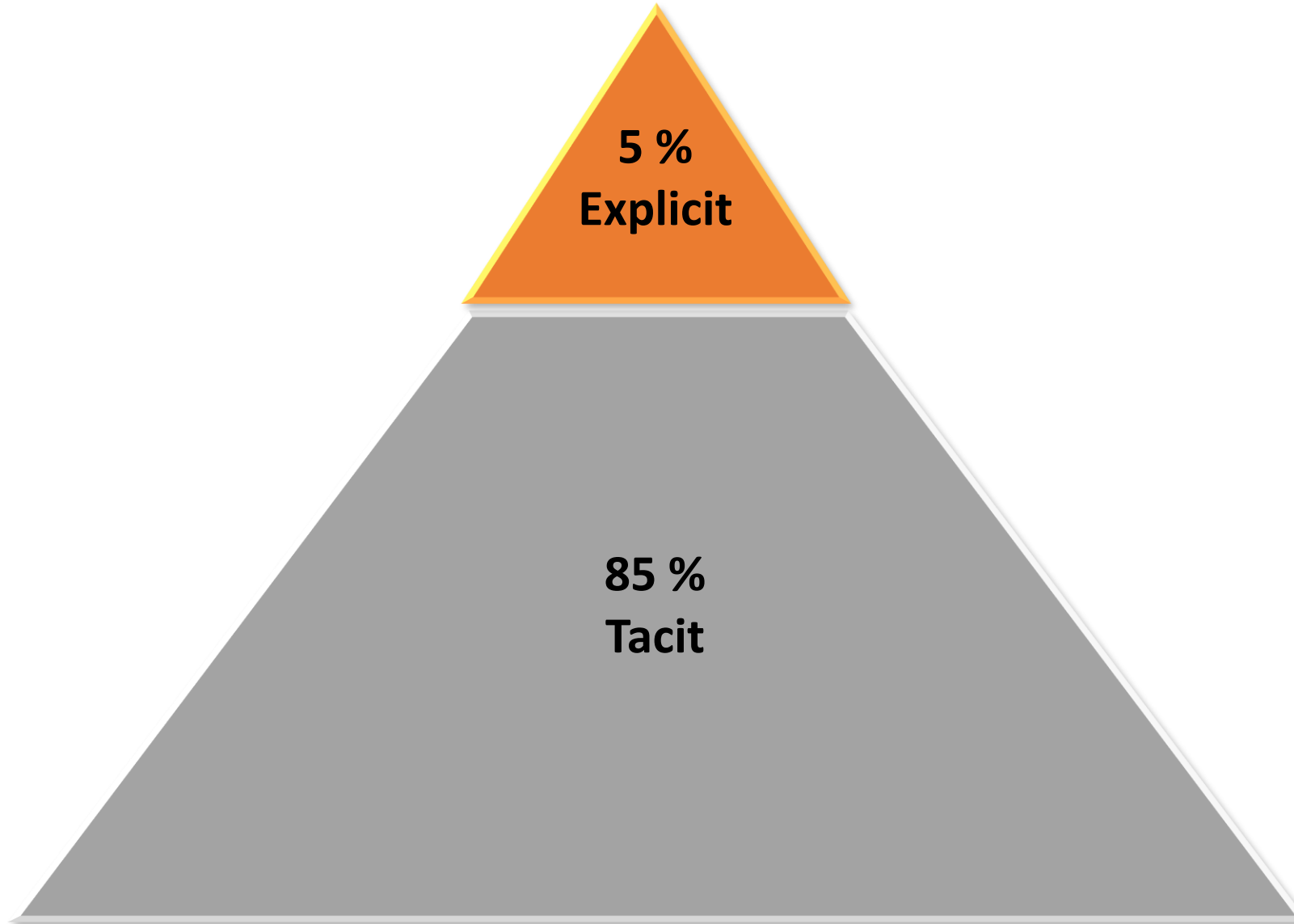
Knowledge embedded in the human mind through experience and jobs.

➤ Knowledge that is usually in the domain of cognitive, and experiential learning.

➤ It is highly personal and hard to formalize .

➤ Hard to document, transfer, teach and learn.

Knowledge Type



Nonaka's Model

➤ **TACIT TO TACIT (SOCIALIZATION):**

Experience among people in face-to-face meetings & discussions. Creates more deeper knowledge. **Socialization** is primarily a process between individuals.

➤ **TACIT TO EXPLICIT (EXTERNALIZATION):**

Articulation among people through dialog (brainstorming, discussions, comments, etc.). **Externalization** is a process among individuals within a group.

Nonaka's Model

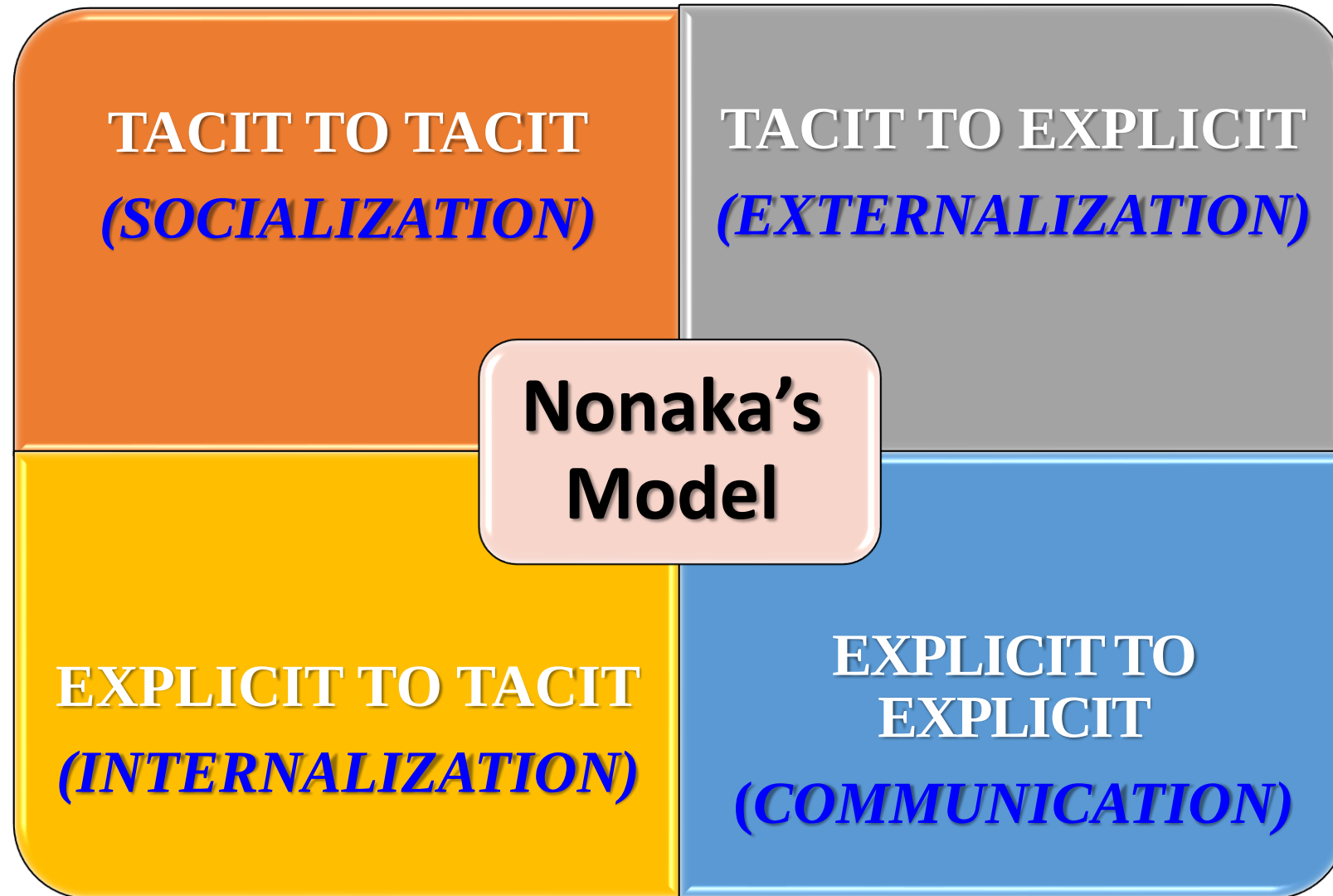
➤ **EXPLICIT TO TACIT (INTERNALIZATION):**

Taking explicit knowledge such as a report and deducing new ideas. **Internalization** transfers organization and group explicit knowledge to the individual.

➤ **EXPLICIT TO EXPLICIT (Combination):**

Articulation among people through dialog (brainstorming, discussions, comments, etc.). **Combination** allows knowledge transfer among groups across organizations.

Nonaka's Model



Knowledge Taxonomy

➤ **Procedural Knowledge:**

It is an understanding of how to do a task or to carry out a procedure.

Example; Driving a car.

➤ **Declarative Knowledge:**

This type of knowledge resides in the short-term memory.

Example; the electrical system of a car, if the headlights are dim then the battery is faulty. *“but it doesn’t explain how the electrical system works”.*

➤ **Causal Knowledge:**

It is an understanding of why this task happen.

Example; Why the drug works.

Knowledge Taxonomy

➤ Conditional Knowledge:

It is an understanding **when** to do a task or to carry out a procedure.

Example; when to describe the drug.

➤ Relational Knowledge:

It is an understanding **the relation** among certain tasks.

Example; How the drug interact with other drugs.

➤ Semantic Knowledge:

It is a **deeper knowledge**. Highly organized. Includes major concepts, facts and relationships.

Example; Back to the electrical system of a car example; Semantic knowledge about the system would consist of understanding about the battery, battery cables, lights, ignition system...etc. as well as the interrelationships among those things.

The mental representation of the specific events in the person life.

➤ Episodic Knowledge:

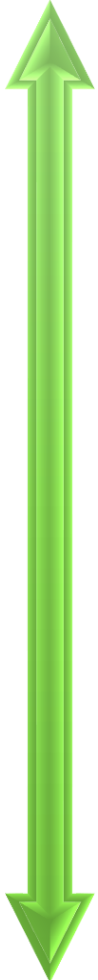
It is based on an experiential information. *The longer a human expert takes to verbalize his knowledge, the more episodic it is.*

Example; Shut your eyes. Then try to touch the tip of your nose with your index finger. At the same time, concentrate hard on what you are doing and on where your arm is at all times. Do the exercise slowly. Allow minimum 20 seconds for it. Then Try to write an essay on exactly how you did the exercise.



Knowledge Taxonomy

Shallow Knowledge



Deep Knowledge

Procedural Knowledge

Knowledge of how to do a task that is essentially motor in nature; the same knowledge is used over and over again.

Declarative Knowledge

Surface-type information that is available in short-term memory and easily verbalized; useful in early stages of knowledge capture but less so in later stages

Semantic Knowledge

Hierarchically organized knowledge of concepts, facts, and relationships among facts.

Episodic Knowledge

Knowledge that is organized by temporal spatial means, not by concepts or relations; experiential information that is chunked by episodes. This knowledge is highly compiled and autobiographical and is not easy to extract or capture

➤ **Knowledge Management System:**

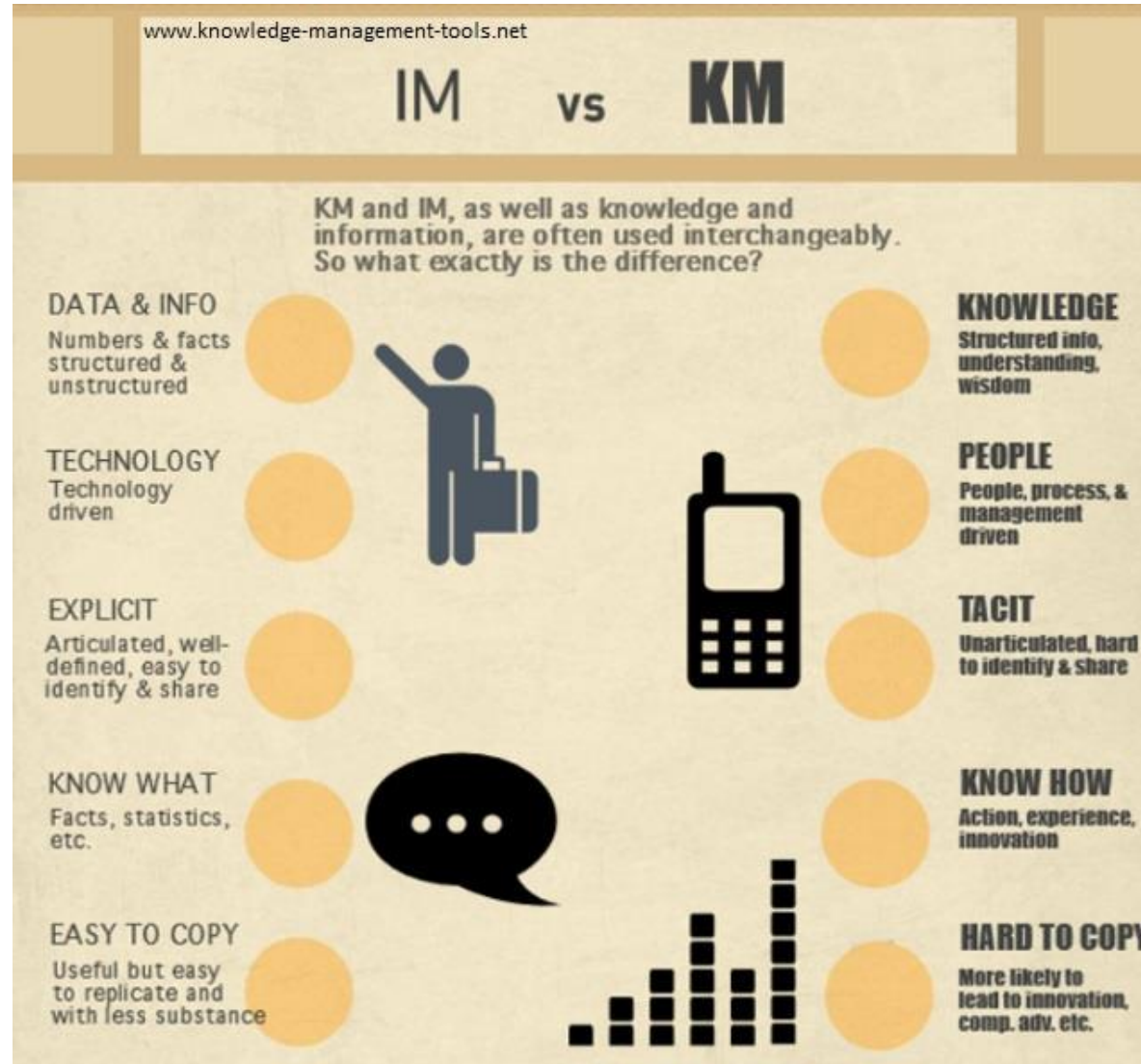
A system that facilitates knowledge management by ensuring knowledge flow from the person(s) who know to the person(s) who need to know throughout the organization.

➤ It helps firms learn from past mistakes and successes.

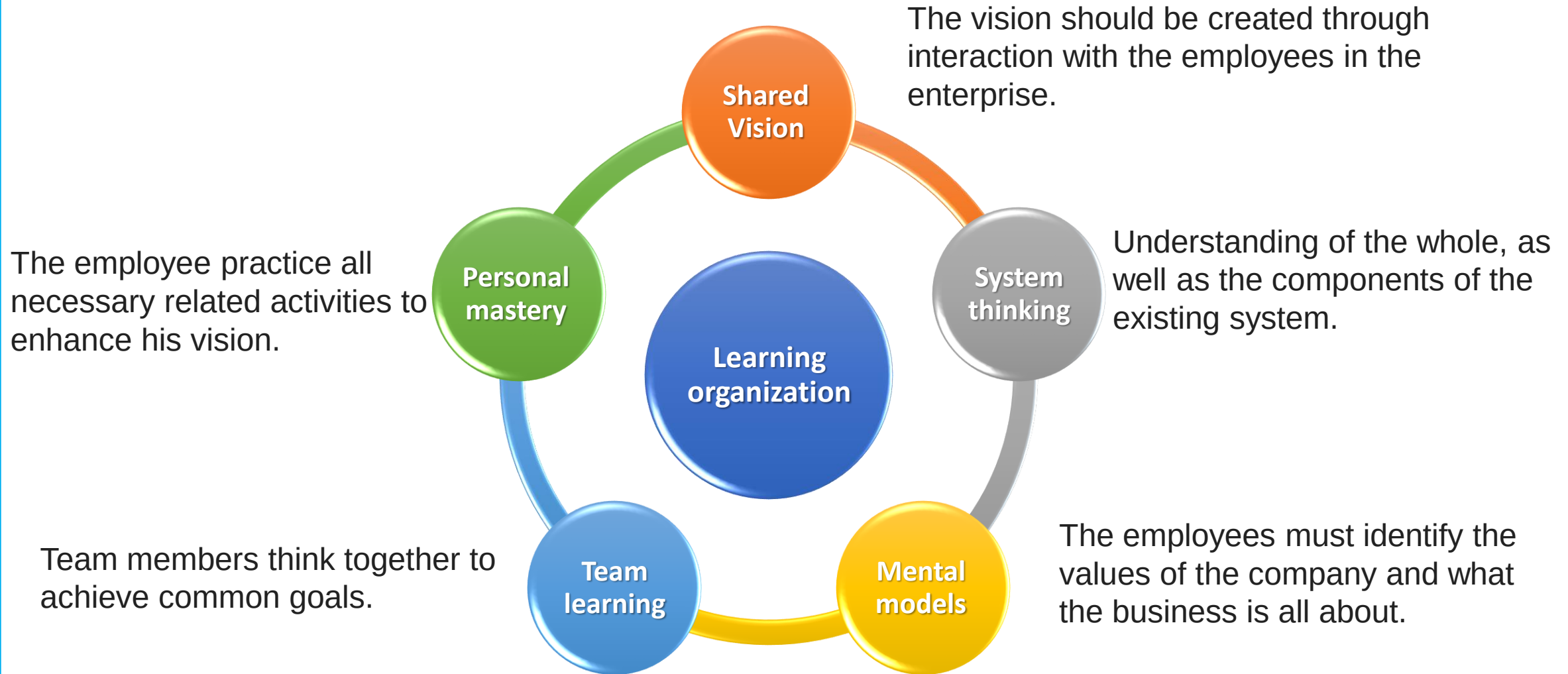
➤ It enhances the firm's ability to innovate.

➤ It enhances the firm's ability to protect its key knowledge and competencies from being lost or copied.

Knowledge Management



The Learning Organization



Senge's Five Disciplines of Learning Organizations.

➤ **The Learning Organization:**

An organization capable of learning from its past experience, implying the existence of an organizational memory and a means to save, represent, and share it through its personnel

There are **three critical issues** to build a learning organization:

- Meaning:
Determining the vision of what the learning organization is to be.
- Management:
Determining how the organization is to work.
- Measurement:
Measuring the rate and level of learning.

The learning organization performs five main activities:

- **Solving problems systematically.**
- **Experimenting creativity.**
- **Learning from past experience.**
- **Learning from the best practice of the others.**
- **Transferring knowledge efficiently through the organization.**

➤ **Organization Learning:**

Development of new knowledge and insights that have the potential to influence organization's behavior.

➤ The process of capturing knowledge and making it available enterprise-wide.

➤ Need to establish organization memory.

➤ People issues are the most important.

➤ **Organization Memory:**

Repository of what the organization "knows".

➤ **Organization Culture:**

Culture is how organizations do things.

➤ An Organization's ability to learn, develop memory, and share knowledge is depend on its culture.

➤ Changing organizational culture is not an overnight exercise.

➤ The **vision and values** serve as guidelines for how employees are expected to lead, behave, and communicate.

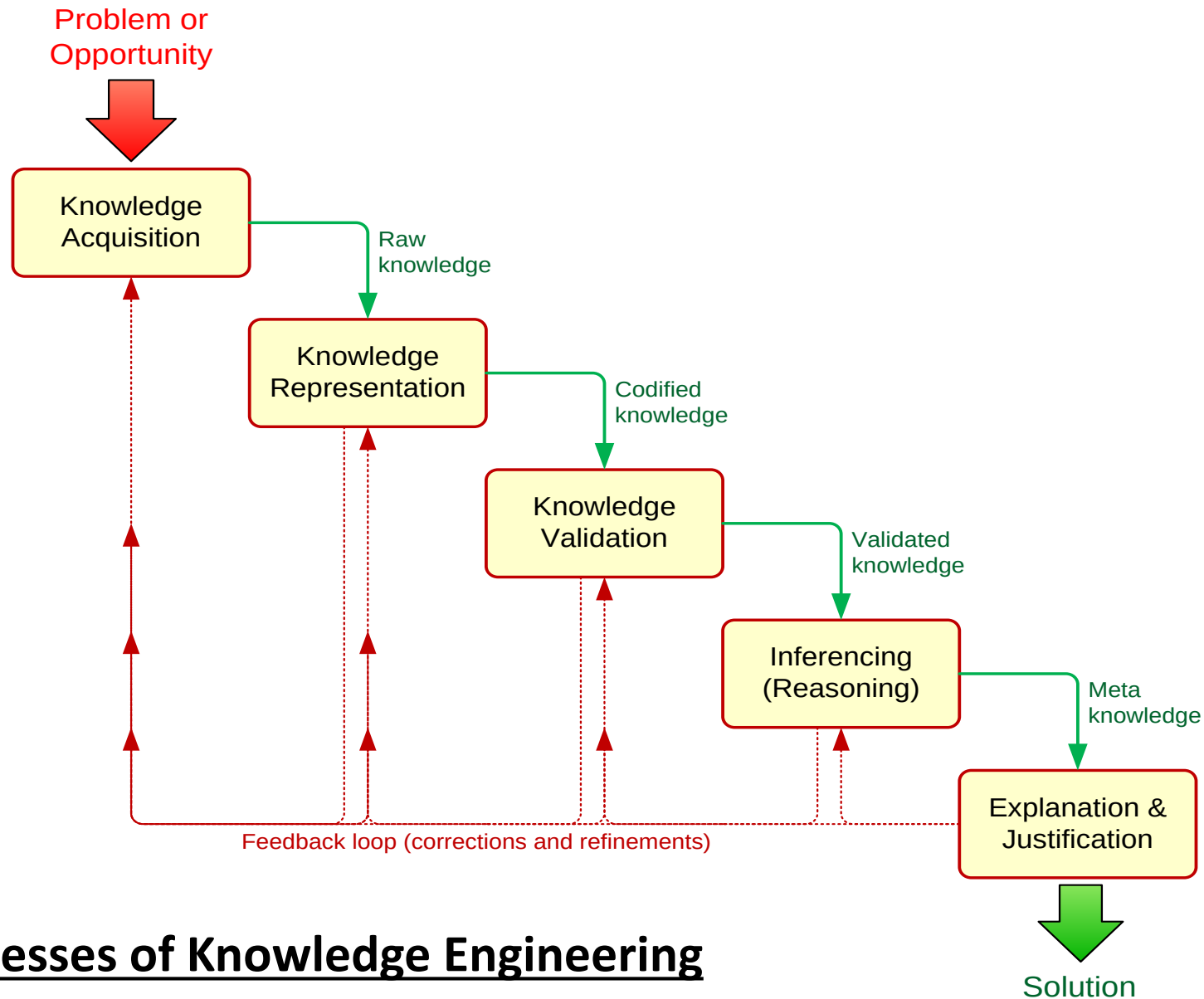
➤ Why people don't like to share knowledge?

- Fear that sharing may jeopardize one's job security.
- Low awareness and realization of the value and benefit of the knowledge others possess
- Dominance in sharing explicit over tacit knowledge.
- Insufficient capture, evaluation, feedback, communication, and tolerance of past mistakes.

- Differences in experience, age, gender, cultural, ethical defenses and education levels.
- Lack of contact time and interaction between knowledge sources and recipients.
- Poor verbal/written communication and interpersonal skills.
- Ownership of intellectual property.
- Lack of trust in people because they may misuse knowledge or take unjust credit for it.

➤ **What is knowledge Engineering?**

A set of intensive activities involved in building, maintaining and using knowledge-based systems.



Summary

- **Knowledge Definition**
- **Understanding knowledge Management.**
- **knowledge Types**
- **Nonaka's Model.**
- **knowledge Taxonomy**
- **Understanding the difference between IM and KM.**
- **The learning organization and organization culture.**



Thank You