AERB Colloquium on
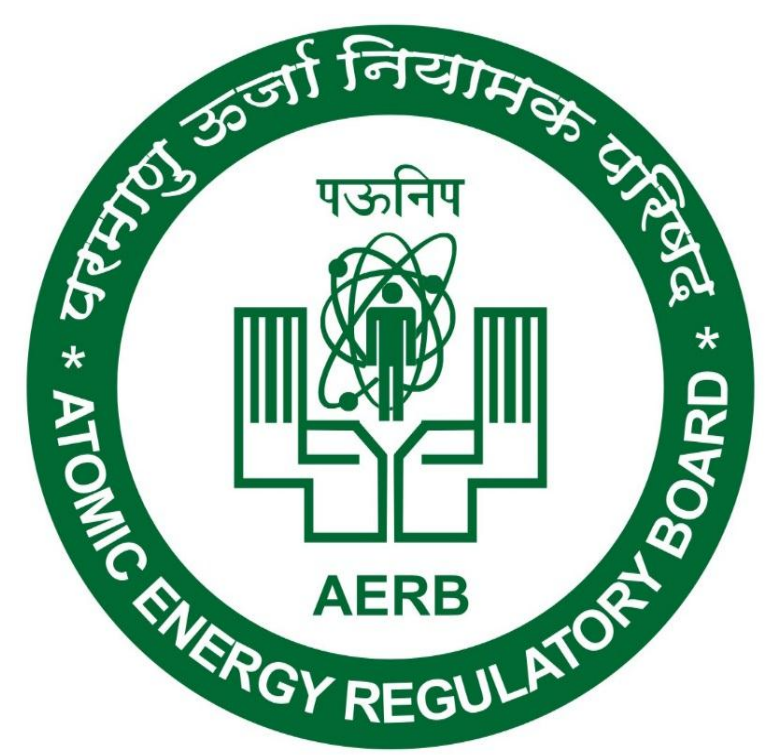
Knowledge Management

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OPSD, AERB

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- Learning on KM
- KM In-Practice at AERB

- I was nominated to participate in the Technical Meeting during March 19-22, 2019 at IAEA, Vienna because of KM related responsibilities in MD&KMS section in R&DD.

- *Already, I had given colloquium on the Topic on June 14, 2019. Again, asked by MD&KMS to deliver colloquium under Refresher Programme.*

- The purpose of the meeting was to review and share *international experience* and *exchange expert views* on best practices learned from the implementation of knowledge management programmes by Member States *under guidance and support of IAEA*.

Knowledge Management (KM) : Definition

The Strategies and processes designed to

-identify, capture, structure, value, and share an organization's intellectual assets to enhance its performance and relevance.

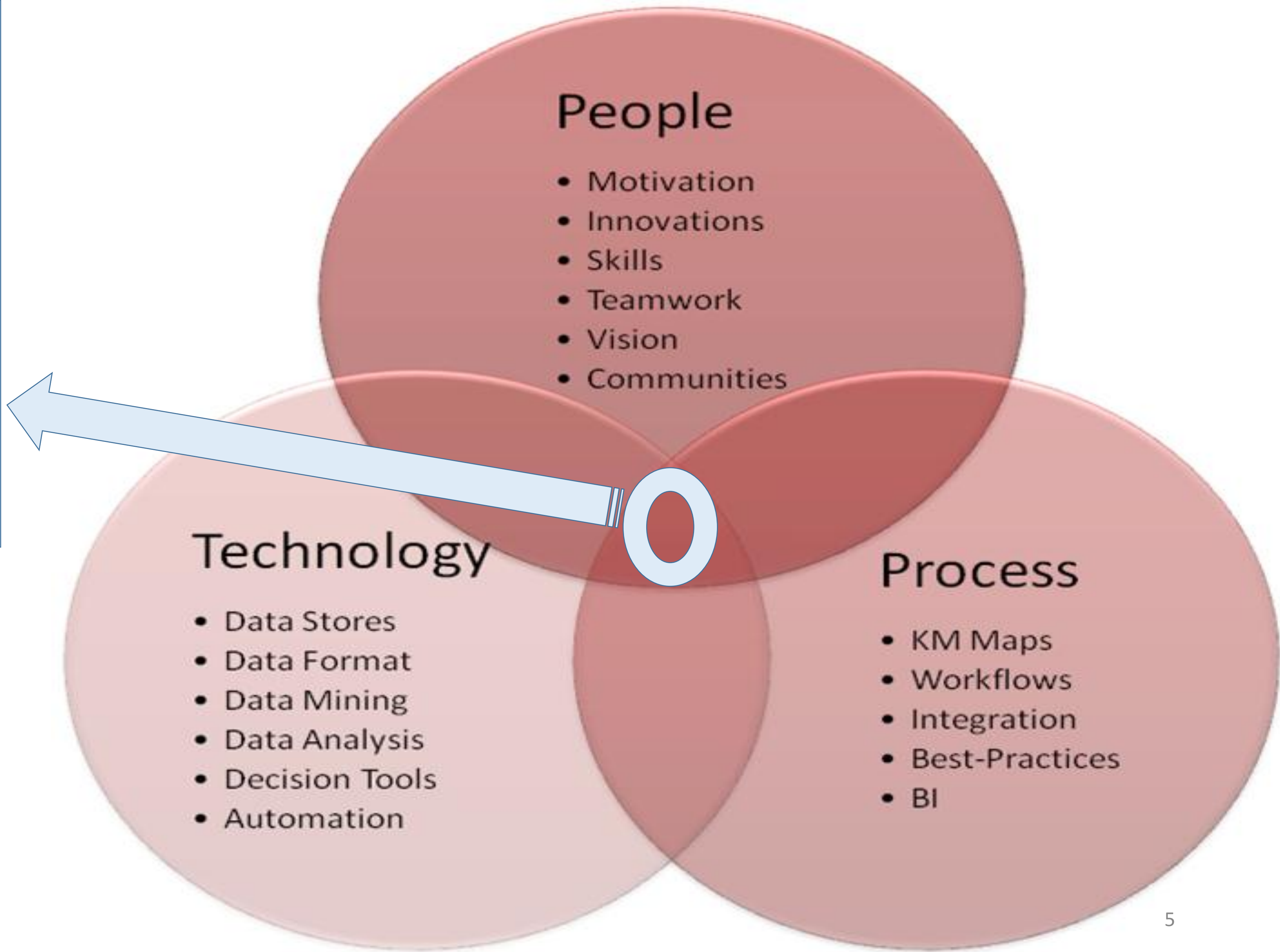It is based on two critical activities:

(1) capture and documentation of individual explicit and tacit knowledge,

and

(2) its dissemination within the organization.

People

Technology
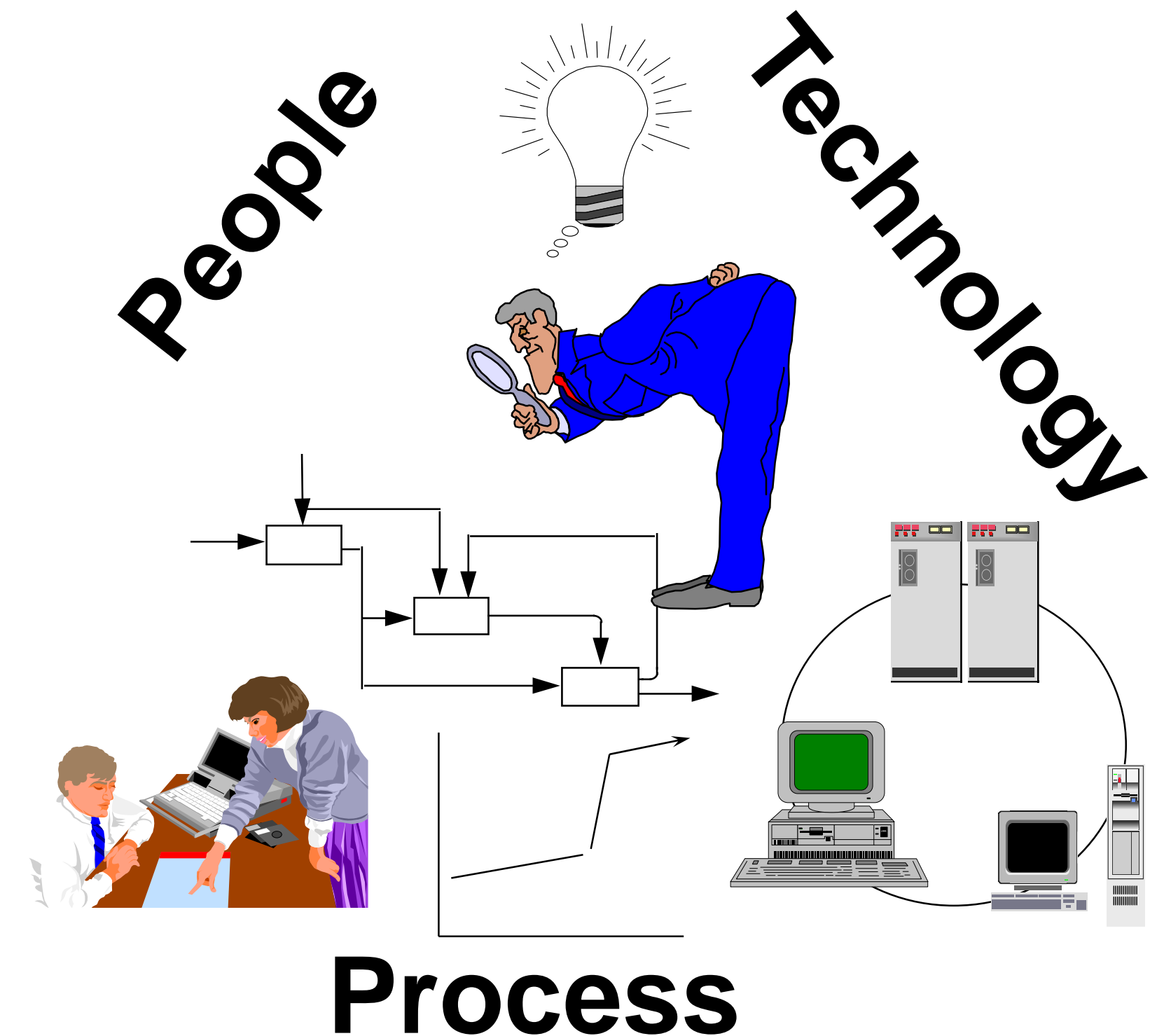
Process
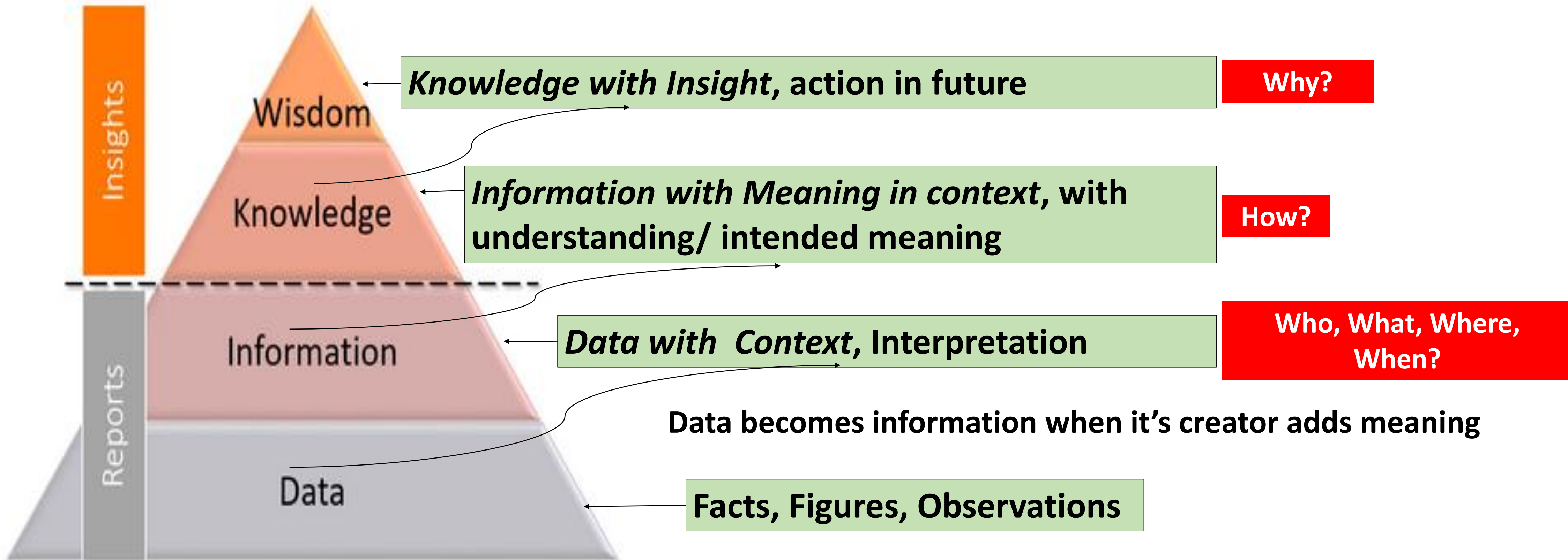
People need to understand the processes, both
- to perform them correctly and
- to execute them by using the most appropriate technology.

People
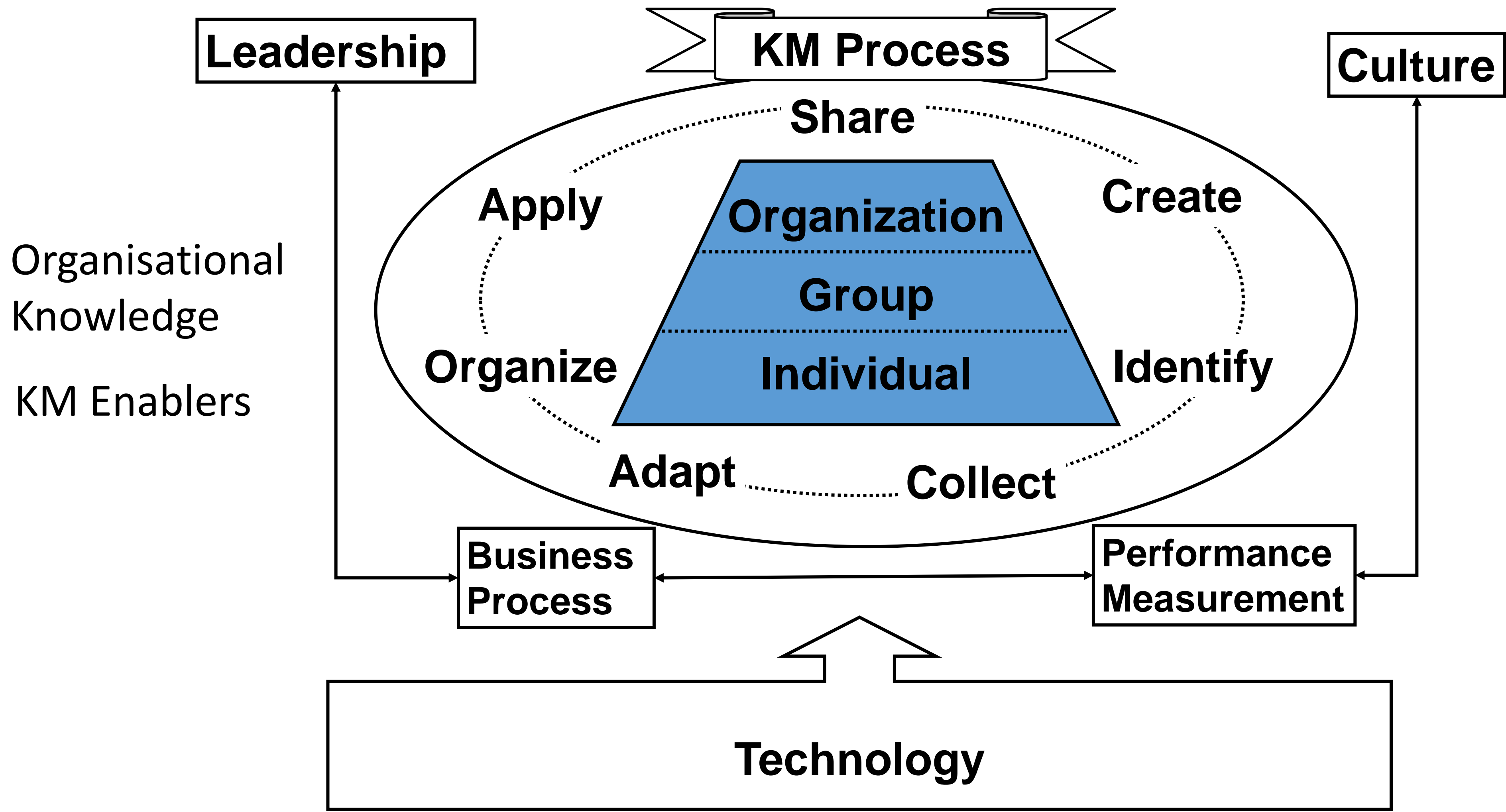- Motivation
- Innovations
- Skills
- Teamwork
- Vision
- Communities

Technology
- Data Stores
- Data Format
- Data Mining
- Data Analysis
- Decision Tools
- Automation

Process
- KM Maps
- Workflows
- Integration
- Best-Practices
- BI

Conceptual Hierarchy of Knowledge

Insights

Reports

Wisdom — *Knowledge with Insight*, action in future — **Why?**

Knowledge — *Information with Meaning in context*, with understanding/ intended meaning — **How?**

Information — *Data with Context*, Interpretation — **Who, What, Where, When?**

Data becomes information when it's creator adds meaning

Data — **Facts, Figures, Observations**

Organizational Knowledge Management Model

Reference. - *JSC VO Safety, Russia (IAEA Presentation)*

Further Elaboration from - Source: Adapted from Arthur Andersen and the American Productivity and Quality Center

Knowledge Assets

Codified Knowledge Assets (*may be* Legally Owned)

Tip of the iceberg

Documents Reports etc.

Coherent working culture

Leadership & Management

Working Solutions
Web of Relationships – formal/informal interactions
Communities of Practice
Experience
Expertise and Theoretical Knowledge
Database

Theory of Organizational Knowledge Creation

- **_Tacit knowledge_** is personal, context-specific, and therefore hard to formalize and communicate.

- **_Explicit or codified knowledge_** is transmittable in formal, systematic language.

<u>Reference</u> - National Radioactive Waste Disposal Institute (NRWDI) of South Africa (IAEA Presentation).

Documents

Records

Files

Explicit Knowledge

5%

95%

Tacit Knowledge

- Commitment
- Competence
- Experience
- Thinking
- Deed
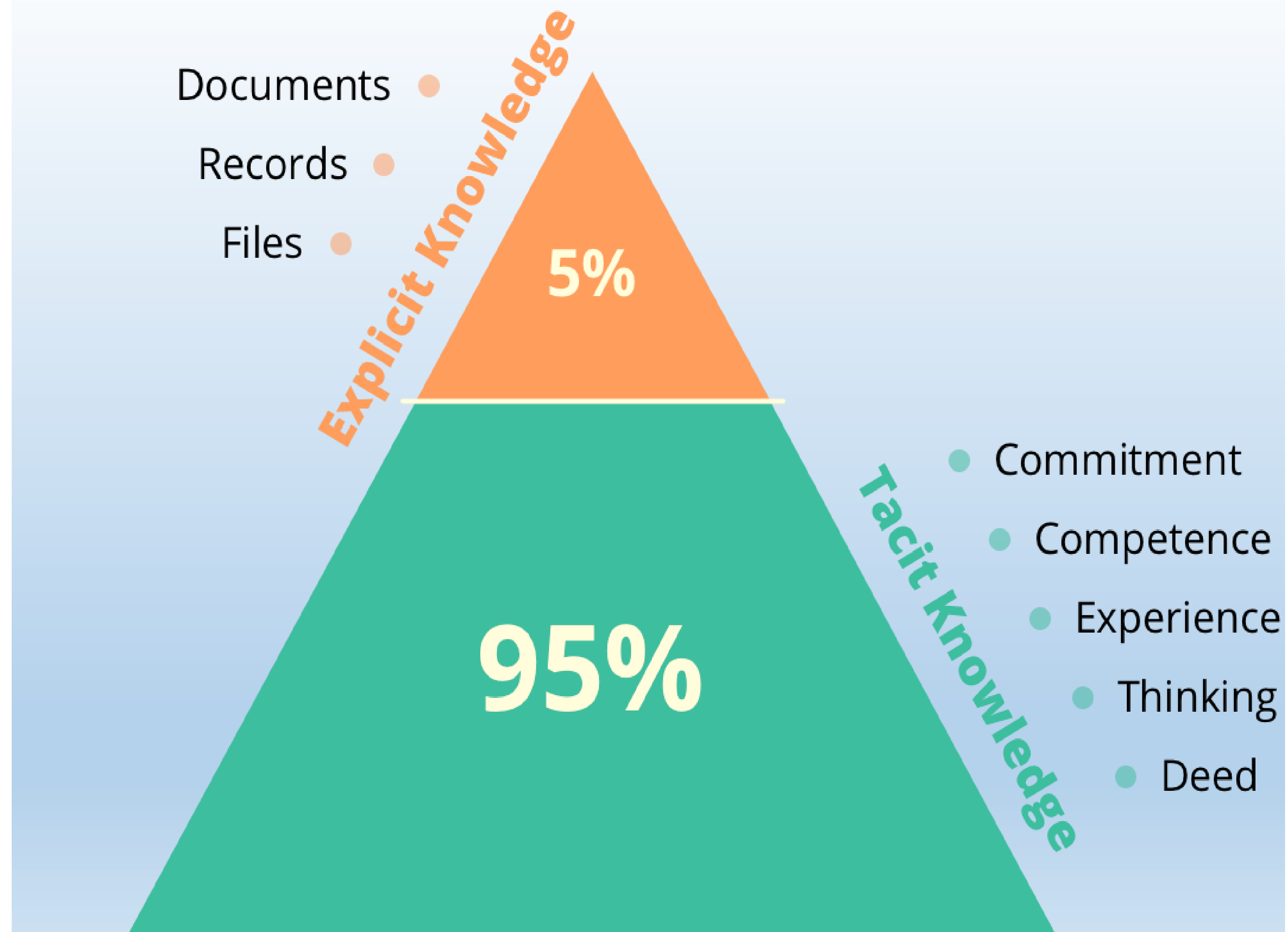
Steps for improving Knowledge Management (KM):

- Create an effective working culture –where questions and learning are encouraged
- Make KM part of everyone's job
- Share information in different ways (in addition to reporting)
- Reward information sharing
- Be patient, persistent and consistent
- Strengthen KM culture by making employees empowered
- Improving IT tools
- Establish a partnership with the communication/ technology area

At SEC NRS*, following initiatives are taken to enhance Knowledge Management (KM) (1/2):

- **Research and Support Programmes**

  - Lectures, seminars, theme meeting, colloquia, On the Job Training (OJT), Self-studying modules etc.

- **Information, Records, Document Management**

  - Archiving of documents, reports, training materials, project documentation

- **Knowledge Repositories**

  - Organizational Website

  - National Nuclear Regulatory Portal

  - Information Enterprise Portal

  - Information and Reference Bank

  - Knowledge Books

Reference : SEC-NRS (TSO, Russian NPPs) [IAEA Presentation]

At SEC NRS, following initiatives are taken to enhance Knowledge Management (KM) (2/2):

- **Human Resource Management**

  - Workforce Planning

  - Succession Planning

  - Personnel screening (multilevel interview)

  - Personnel Adaptation (training for newcomers, tutoring, mentoring)

  - Merit based Promotion System (profit and non-profit motivation)

  - Personnel Career Planning

Reference : SEC-NRS (TSO, Russian NPPs) [IAEA Presentation]

Information Resources which are used to disseminate the Knowledge:

1. National Nuclear Regulatory Portal 2. Official Website 3. Various Databases & 4. Information Corporative Portal

- Implementation of 'Knowledge Management Mobile Application (KMMA)' under 'The Information Corporative Portal'.

- The mobile app contains database of expert reports, information digests, library of normative documents, training materials, personal tasks and calendars etc.

Reference : SEC-NRS (TSO, Russian NPPs) [IAEA Presentation]

KM In-Practice at AERB

The necessity of implementing knowledge management system (KMS) at AERB

- to reduce the risk of losing critical knowledge in case of retirement, professional advancement and staff turnover;

- to improve personnel and organization performance (less errors and better quality);

- to improve the decision-making process;

- to transfer knowledge to new generations;

- to attract and develop skilled individuals;

- to improve Integrated Management System (IMS);

- to facilitate access to information for employees and management;

1.   **Mentorship Programme (through training, OJT, interaction etc.)**

- a. Within Organization (inter/intra

division/section, group etc.)

- b. Outside Organization (On the Job Training,

collaboration etc.)

Mentoring serves to preserve 'institutional memory' by sharing information and experience from one to another.

2. Sharing Lessons Learned / reviews :

After action-review of important regulatory activities bring openness and learning.

Process of outcomes are not only Tacitly shared by individuals involved but also Explicitly documented and shared with a wider audience.

3. Regular intra-office or intra-division meetings:

To have consensus/ prudency in decisions, meetings are conducted regularly.

Employees come together and interact on the agenda items, which is the best platform to exchange the ideas and experiences and thus transfer knowledge among themselves. It provides opportunity for networking among colleagues.

Advantage: It provides face-to-face interaction and it helps in developing relationship between employees from different fields.

4. Colloquiums/theme meetings/Knowledge platforms:

Topics are selected as per the organizational requirements/ learning interests of the set of people/availability of the speakers.

The basic purpose is a real need to know what each other knows. It also provides a vehicle for conveying unseen tacit knowledge. A sound practice to leverage the knowledge and experience of experts in the nuclear community.

1. **Justification of an investment in Knowledge Management**

    - Incremental benefits w.r.t. Time, Quality and Money

    - Real options approach

    - Robust IT system (ROI)

2. **Overcoming cultural hurdles to knowledge sharing**

    Employees tend to protect at least some of their knowledge or best practices as their edge.

3. **Encouraging employees to use and share knowledge**

   - Even for the best knowledge management system in place, if employees are not trained in using/sharing, aware of its potential benefits or encouraged to use/share it; it is seen that compliance is poor.

4. Chances of retaining wrong information
 - It is very unlikely, but to be safer side, there is access control and content review mechanism
 - It is seen that mistakenly attempts are made to retain all information resulting into information overload.
 - *Quantity rarely equals quality and KMS is no exception.*

Thank You