



Knowledge Management (KM) Training Material

Prepared by

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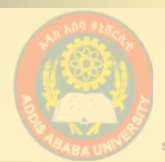
KM Basics and Rationale for KM

Module 1



Objectives

- At the end of the module, trainees will be able to
 - Differentiate data, information and knowledge
 - Explain knowledge management
 - Differentiate the types of knowledge
 - Recognize the rational of KM in the organization



Module one content



- Basic concepts
- Type of knowledge
- Knowledge management system
- KM benefits in the Organization
- Discussion



What is the difference
between information and
knowledge?

Basic concepts

Data

- raw facts collected for a study or reference
- serves no particular function

Information

- Data organized in meaningful way
- Has significance and value for actions

What is knowledge?

- Aggregation of simple information into complex information that provide deeper understanding
- May be defined as a capability to do something
- A cognitive framework to interpret new information



Software

Knowledge

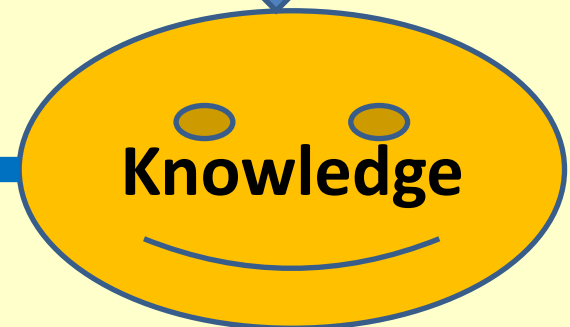
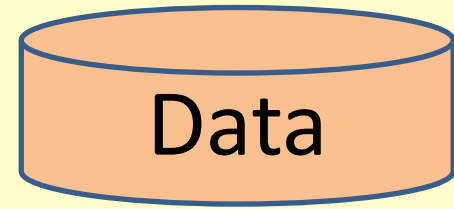
Capability



Relationship between data, information and knowledge



e.g. socio-economic data



Understand the world
(e.g. **high population growth**)

Modify reality (e.g. **Reduce population growth**)

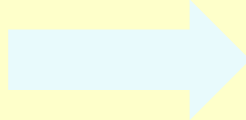




List three examples of knowledge
at ESS

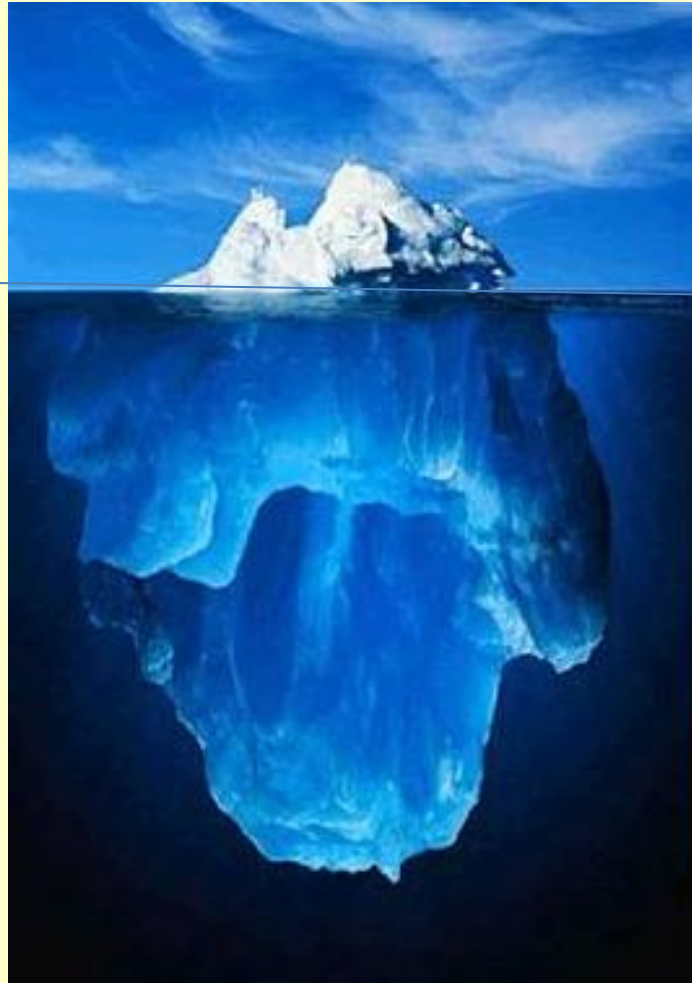
Knowledge classification

Epistemology of knowledge



- Tacit and explicit
- Tacit, implicit and explicit
- Declarative and procedural

*Explicit
Knowledge*



Documents,
formulas, models
Diagrams

*Tacit
Knowledge*

Thinking
Experience
Beliefs
Insights



Can you list down the tacit and explicit type of knowledge at ESS?

Ontological classification of Knowledge



1. Individual knowledge

- Knowledge held by individuals
- Created while individuals do daily routine tasks
- A Foundation for organization knowledge
- Mostly tacit type



2. Group knowledge

- Knowledge held by a group
- Created in group activity
- Owned by all members of the group
- Mostly tacit type knowledge

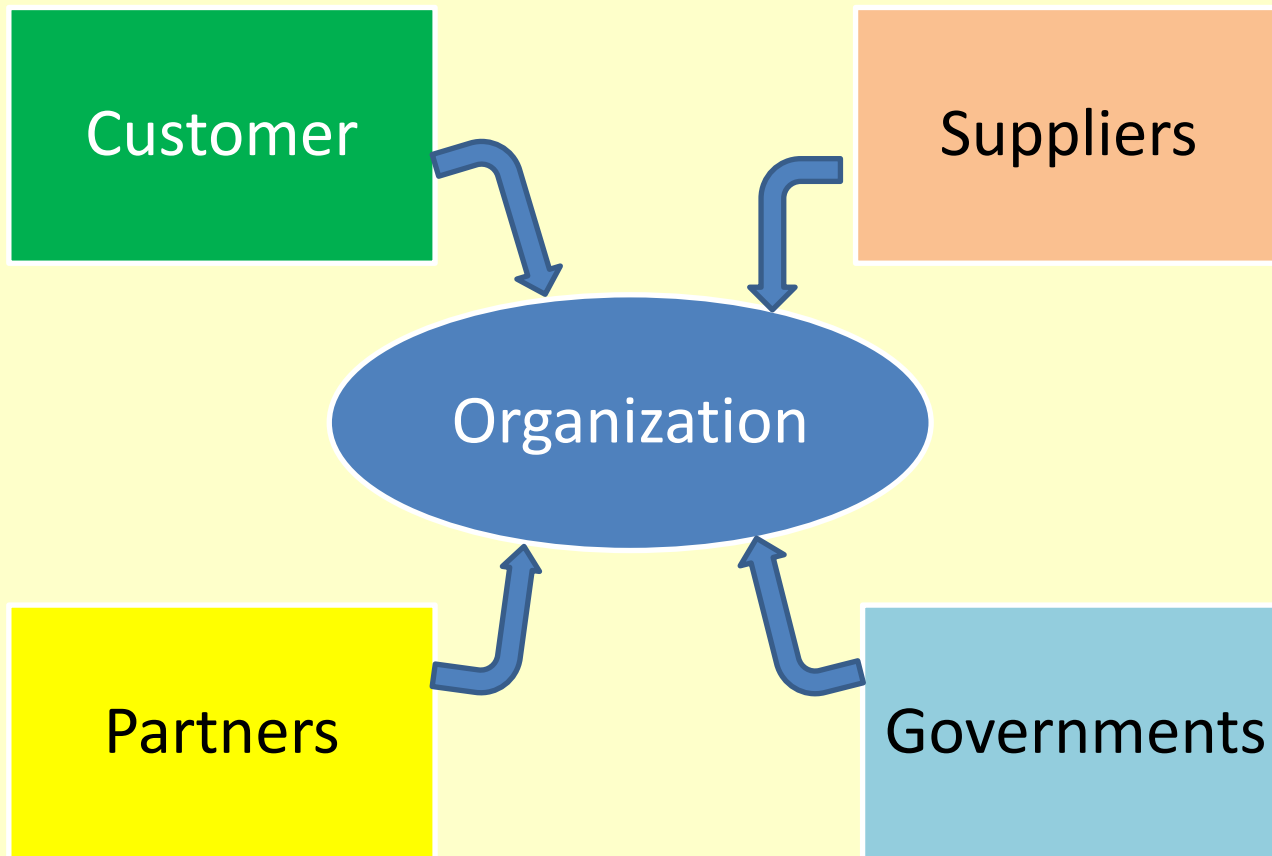


4. Organizational knowledge

- Knowledge held by organizations
- Exists in procedure manual, policies, artefacts, systems, etc
- Organization success depends how fast they can integrate their employees knowledge



5. Inter-organizational knowledge



Discussion



- Arrange trainees into three groups and let them to discuss for 5 minutes to list the type of organizational knowledge held at ESS
- Share your findings to the class



Knowledge Management

*Knowledge Management is the **explicit and systematic management of vital knowledge - and its associated processes** of creation, organization, dissemination, use and exploitation.*

Knowledge Management (KM)

- KM is intended to maximize utilization of **knowledge resources** which is available in side and outside the organization





Summary

- knowledge is a capability
- Knowledge exists in different forms
- Knowledge resides in different locations
- KM is a process to manage internal and external knowledge resources



Discussion



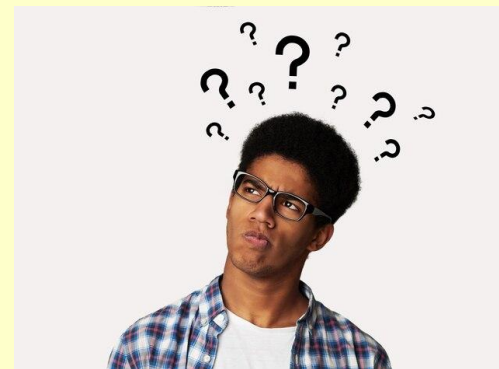
1. Why knowledge management has become a hot issue at present time?
2. Discuss within your group and write down on a flip chart



The Rational for KM



What are some of the
business challenges at ESS
that require adoption of
KM solutions





KM Impacts on the organization



- Improve decision making capability
- Shares Lessons learned practices
- Promote organizational learning
- Improve capability for innovation
- Customer satisfaction
- Overall organizational performance

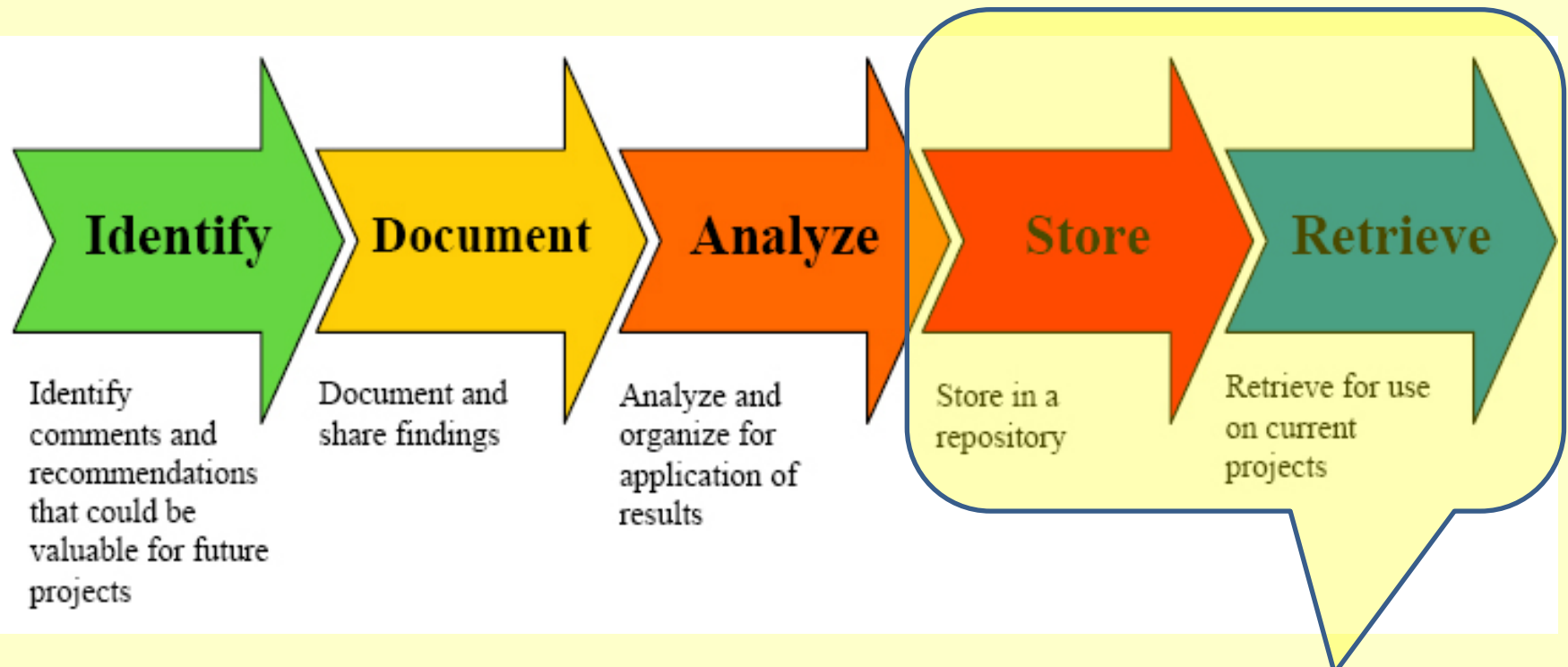
Improve Decision Making

- KMS serve as a **centralized knowledge repositories**
- Makes **relevant knowledge and information** easily accessible
- Provides **advanced analytical capabilities**



Sharing Lessons Learned

- Lessons learned are experiences of a completed project



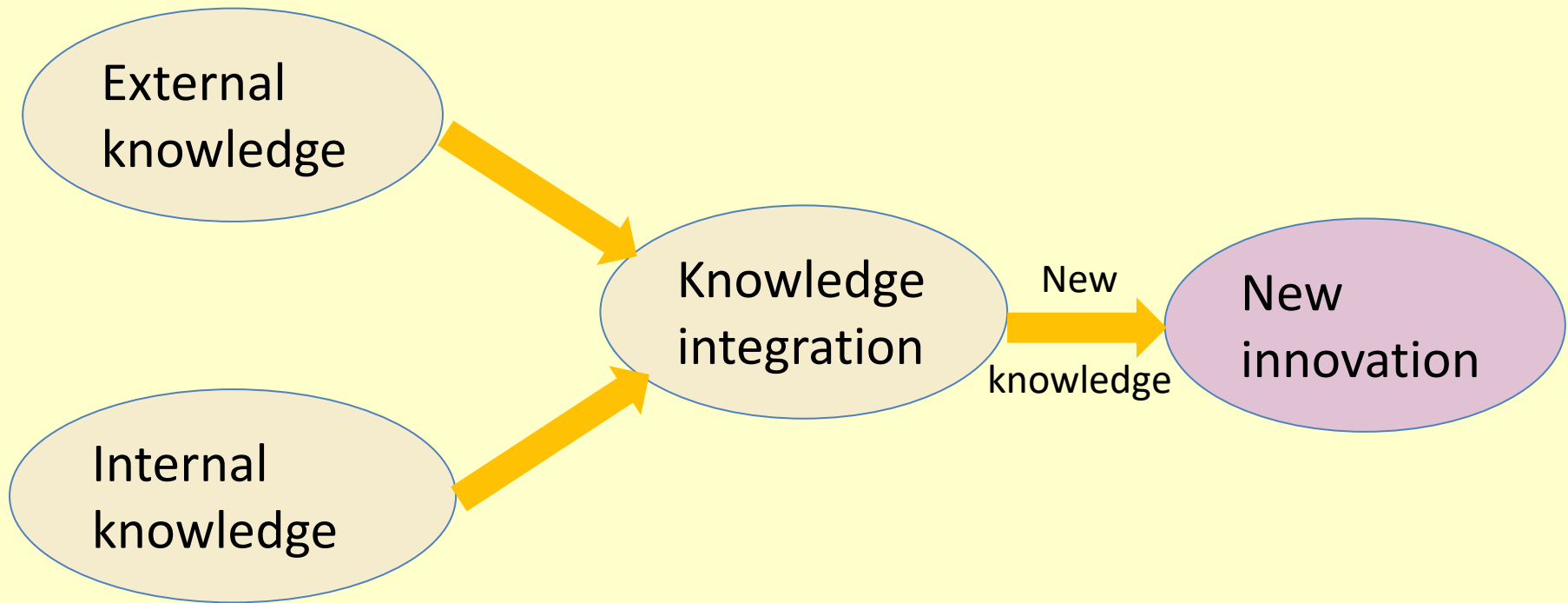
KMS

Reduce information Overload

- KMS creates one window portal to access all organizational knowledge resources



Increase Organizational Innovativeness



On the job learning



Easy access to
information

KMS as Learning
Platform



Collaboration



New/Improved
capability

Reflection



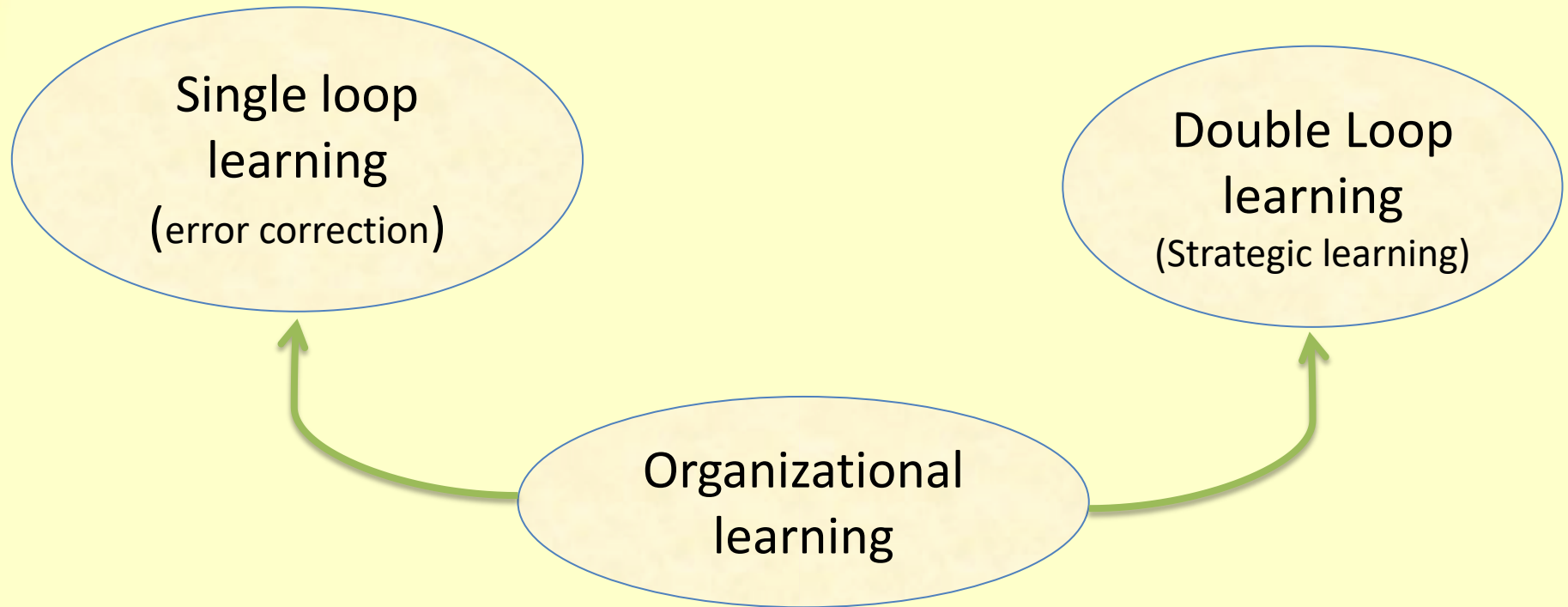
- Can you say ESS has a good a learning environment that promote on the job learning?
- What are the indicators for the presence of favourable on the job learning environment?



Organizational Learning

- A learning organization is an organization
 - skilled at creating, acquiring, and transferring its employees knowledge and
 - at modifying its behavior to reflect **new knowledge and insights**
- It is the sum of its employees learning

Types of Organizational Learning

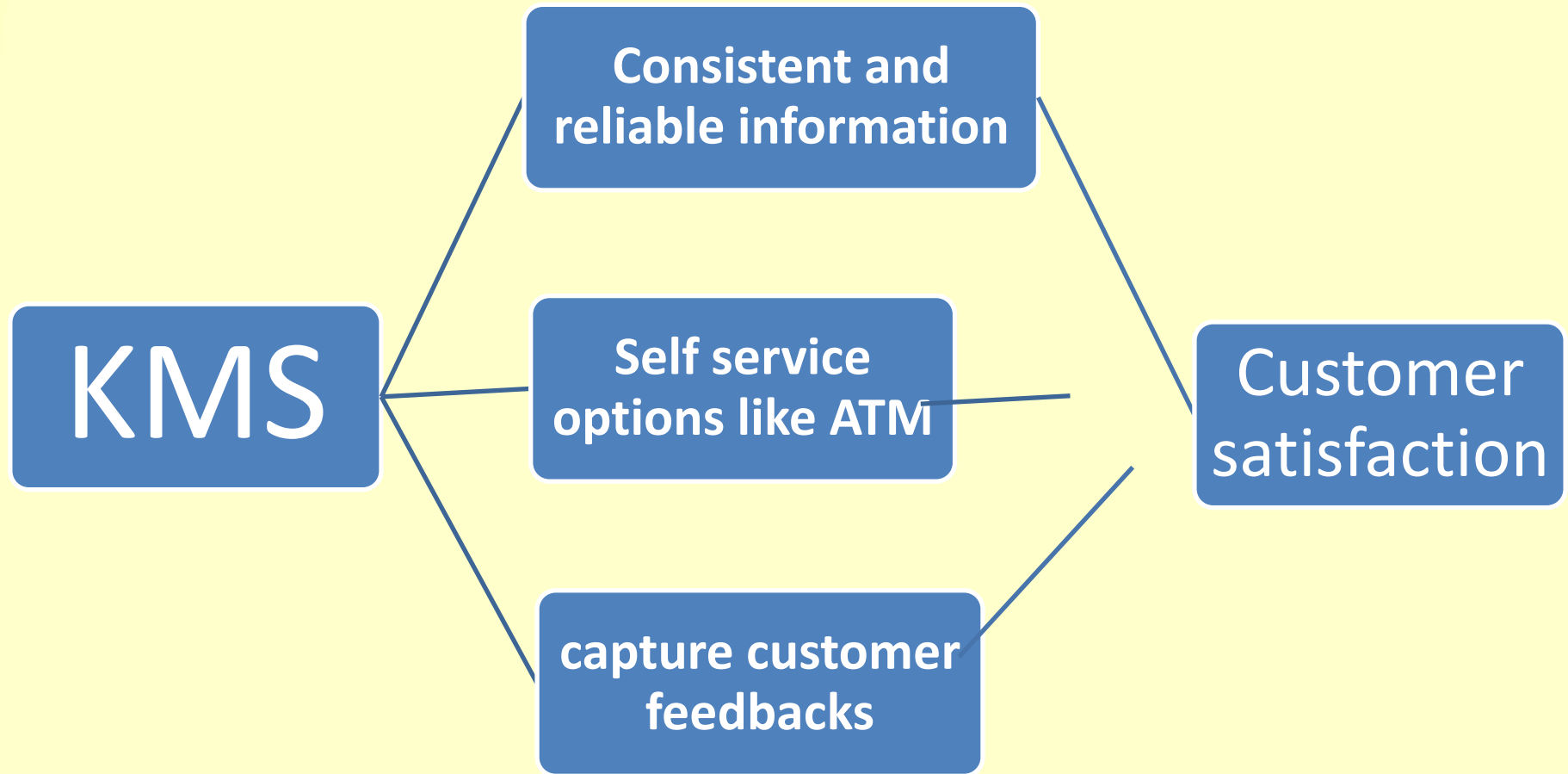


Reflection

- How do organizational learning takes place to ESS?
- Do you think that it is effective
- If not, what improvements do you suggest?



Better Customer Satisfaction





KMS Success Cases

- **Hoffmann-Roche**, the Swiss pharmaceutical firm, has estimated that it saves over **\$1 million** per day due to its KM activities
- ❑ **Chevron Corporation** estimates that it saved an initial **\$150 million**, plus at least another **\$20 million** annually by instituting a best practices program
- ❑ **Hewlett-Packard's** knowledge efforts aimed at customer service have reduced average call times by two-thirds and the cost per call has fallen by 50 percent



Summary

- KMS has a variety of impacts on the organization
 - Better quality decision making
 - the job learning
 - organizational learning
 - capability for product and service innovation
 - customer satisfaction
 - Cost savings



Case study

- You want to utilize knowledge as a strategic resources in the business process of ESS, discuss the following questions as your guiding questions
 1. What are the main challenges of KM at ESS that affects overall organizational performance
 2. Present your discussion result with a cause effect diagram
 3. Present for your colleagues



KM Components

Module 2





Objective

- To let trainees enumerate components of KM
- To let trainees understand the importance of **KM maturity assessment** and the stages at which organizations will fall in terms of KM capability



Outline

- Objective
- Key Components of KM (People, Content/KA, KM Technology, Process, Strategy)
- KM Maturity
- Takeaways

Brainstorming Session

Question

What is the most determinant component of a KM initiative? Why?

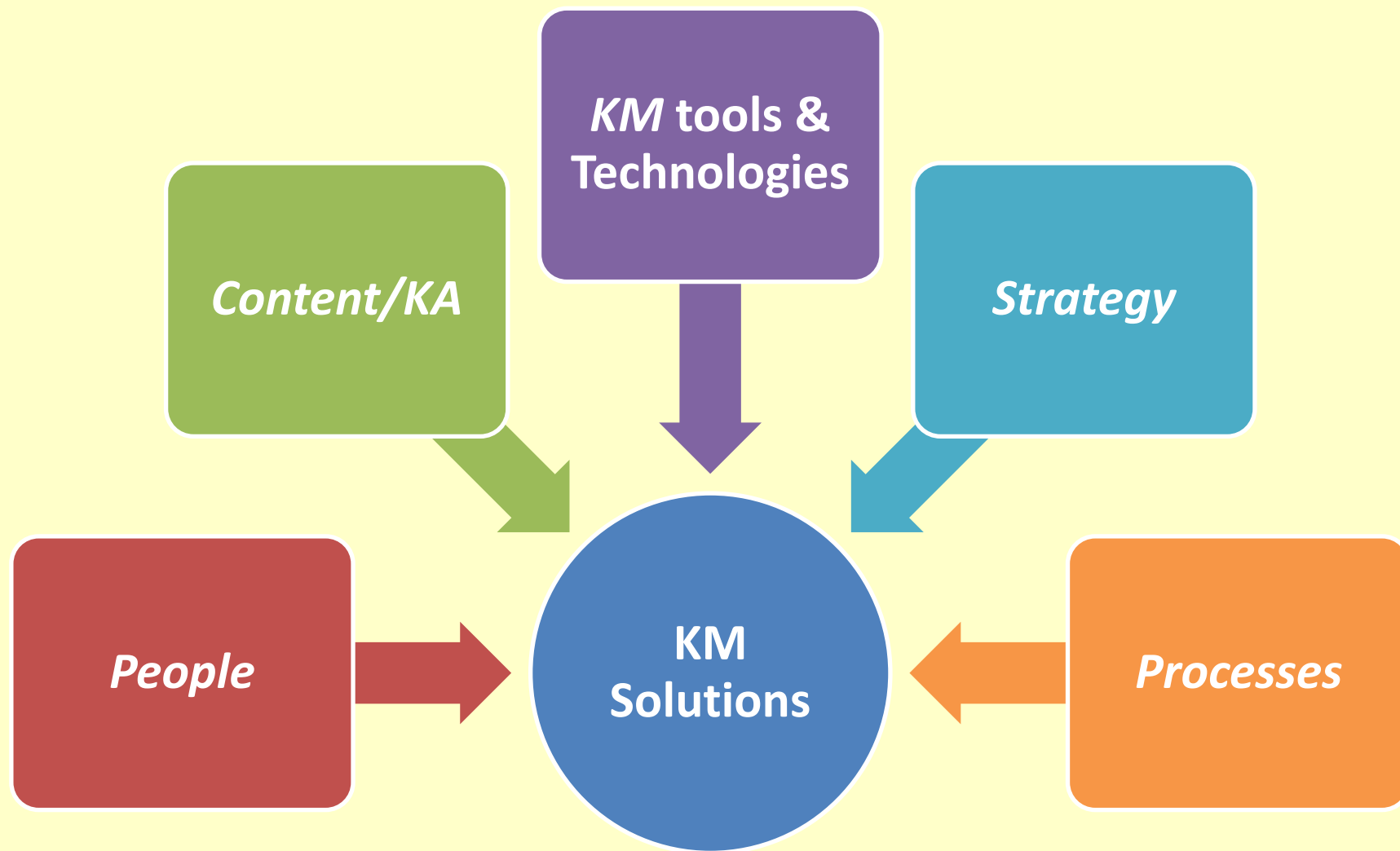


Key Elements/ Components

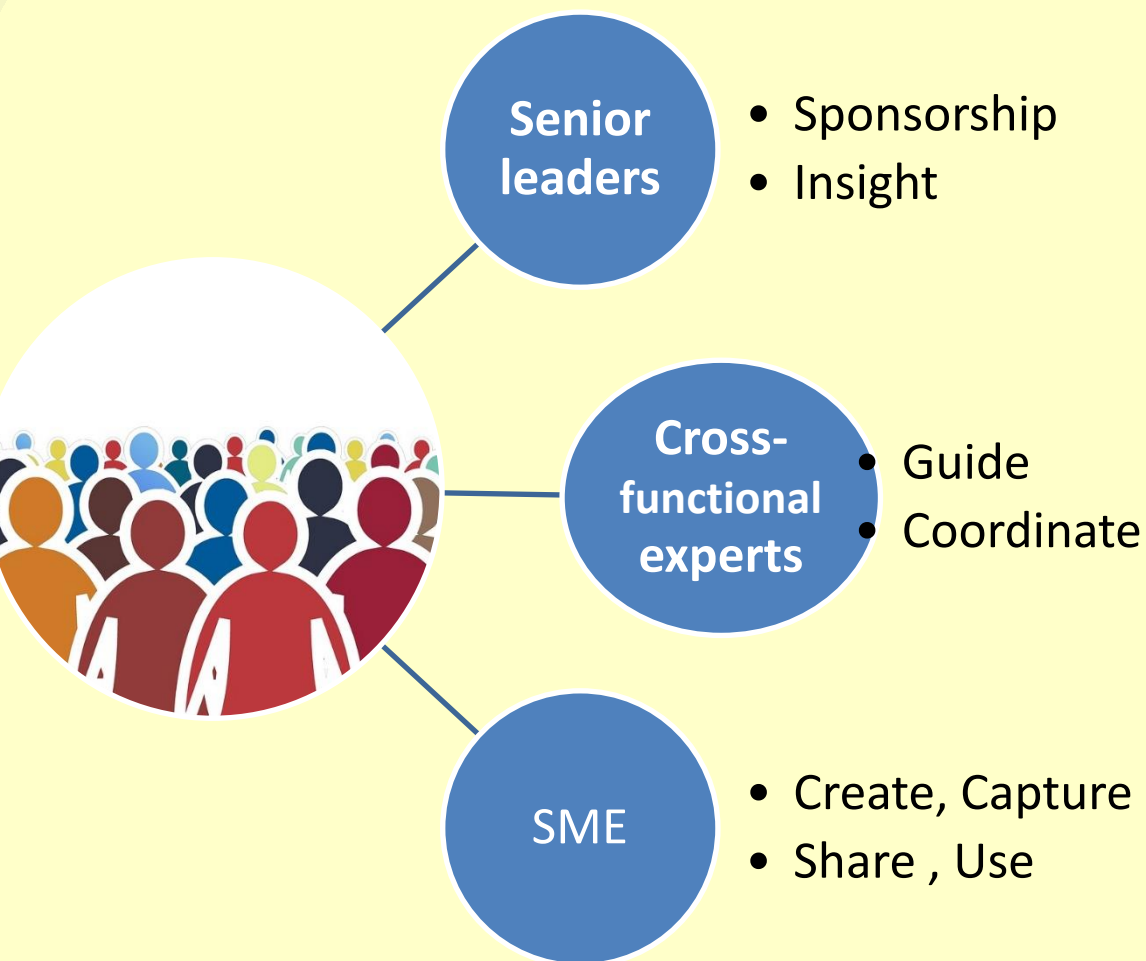
- Major components of Knowledge Management
 - People
 - Strategy/policy
 - Content/KA
 - KM tools and technologies
 - Process



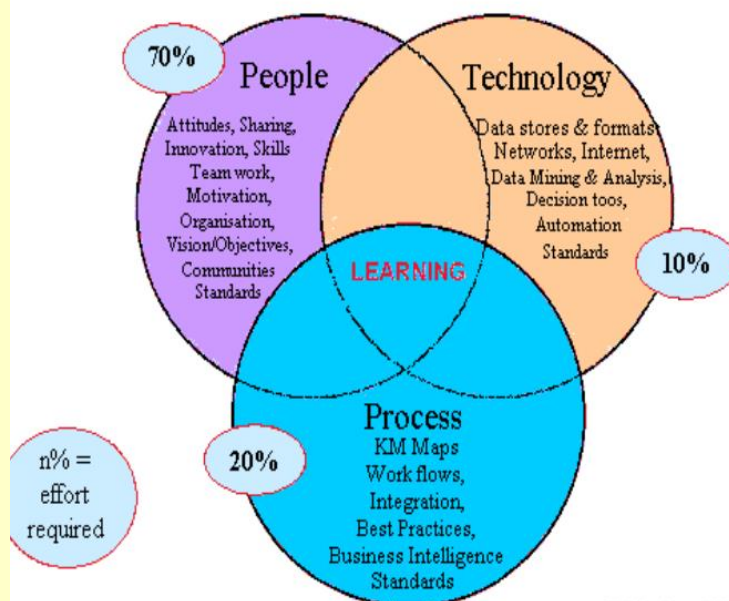
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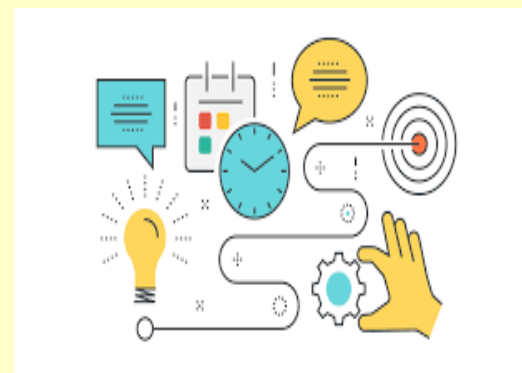
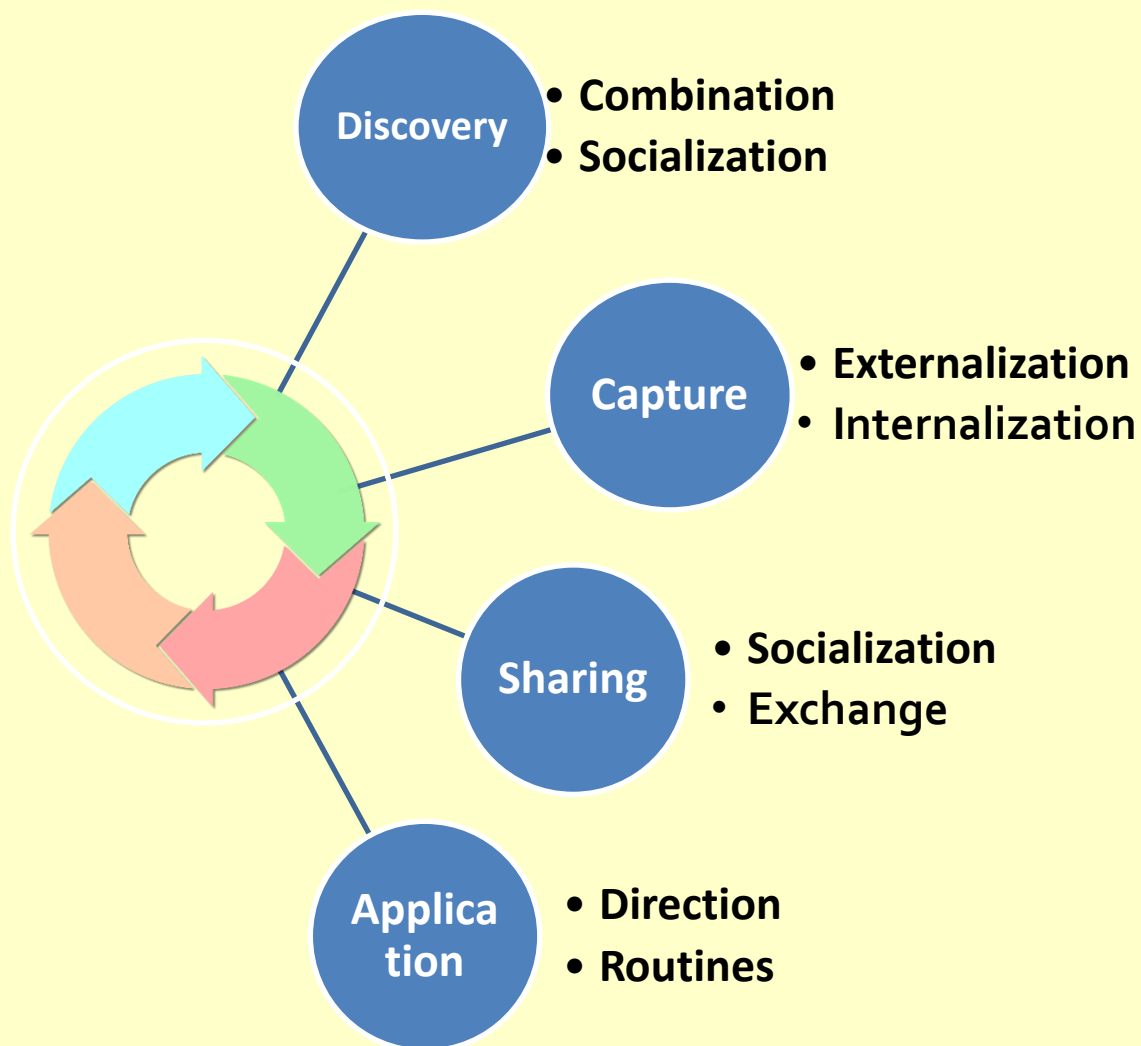
People



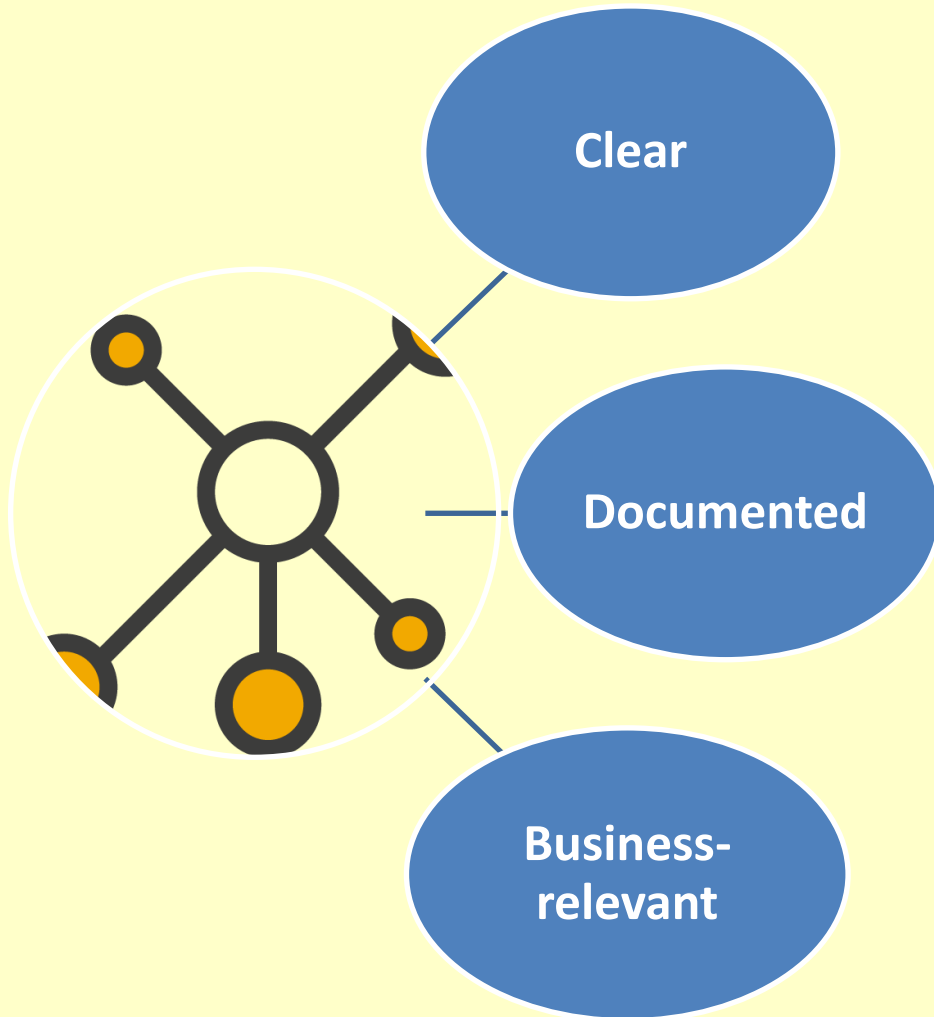
Knowledge Components



Processes

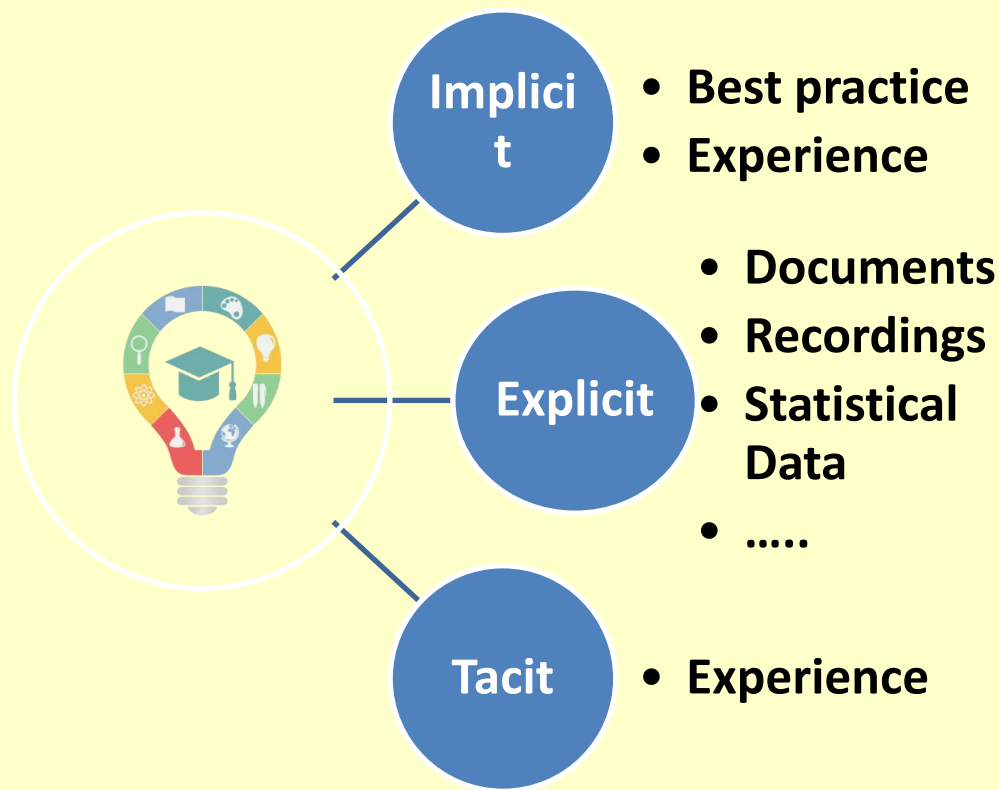


Strategy/Policy



A KM strategy is a plan that outlines how an organization will **capture, store, share, and leverage** its collective knowledge to achieve its goals

Content /Knowledge Assets



- According to ISO 30401-2018 knowledge could be a human or organizational asset enabling effective decisions and action.
- Knowledge include **insights** and **know-how** associated with a content/document.
- In this context, Knowledge is defined as **content with associated insights and metadata.**



Case - EKMap

Problem loading page × All Knowledge Assets | EKMaP × km technologies icon - Google × short cut for screenshot - ×

← → ↻ https://ekmap.aau.edu.et/ekmap/blogs-grid

Ethiopian Knowledge Management Platform.

EKMaP

HOME KNOWLEDGE ASSETS TOPICS COLLABORATION CONTACT

HOME - ALL KNOWLEDGE ASSETS

KNOWLEDGE ASSETS

Ethiopian Knowledge Management Platform.

Books

Expert Database

Government Directory

Journal Articles

News Articles

Proclamation And Laws

Project

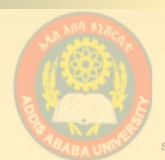
Reports

Multimedia

Adama, Ethiopia

May 27, 2024

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Case - ACEWM

In this context, Knowledge is defined as **content with associated insights and metadata**. Metadata structure about a specific content is to be designed based on accepted standards and a recommendation from ACEWM. The types of Knowledge assets identified are:

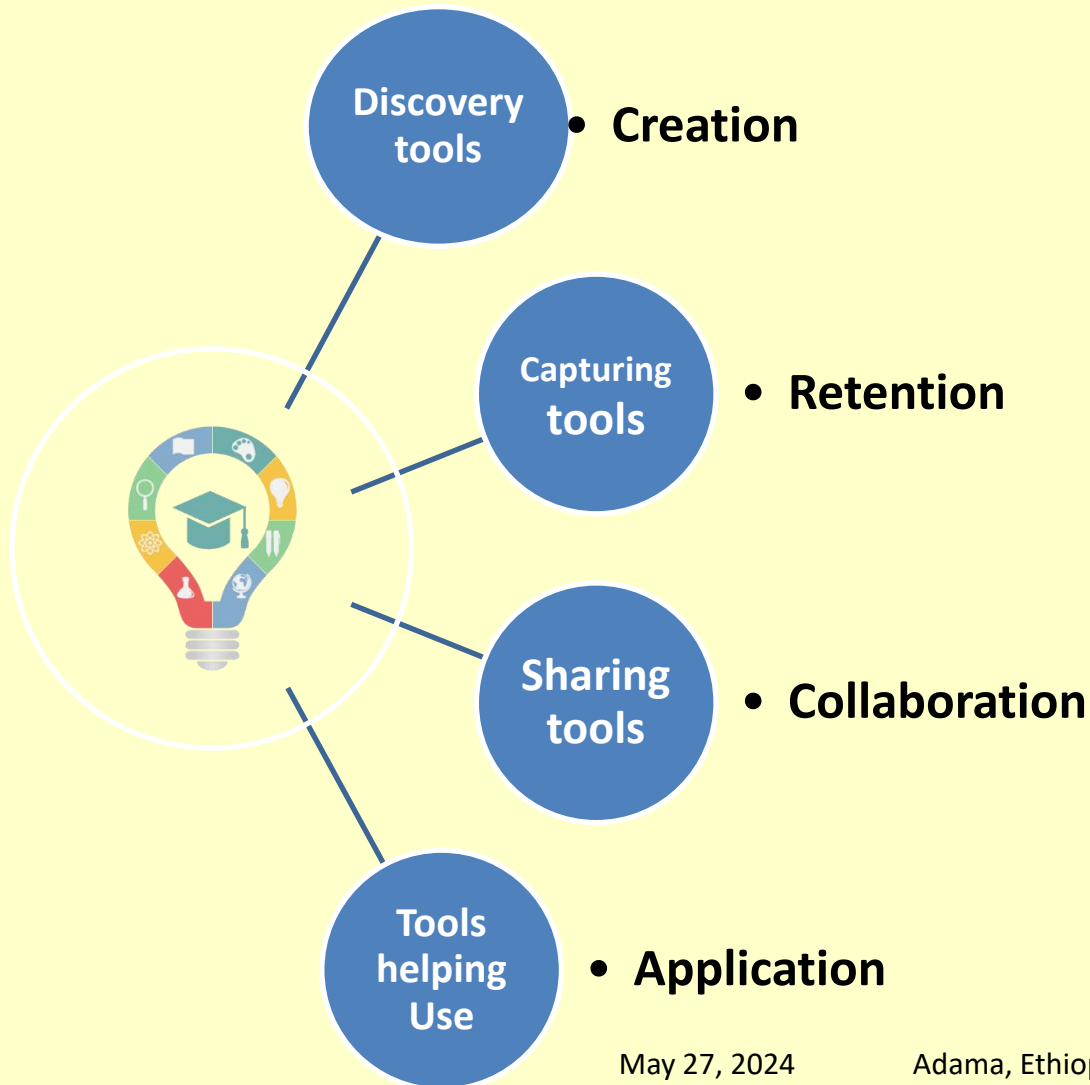
- Academic Pro.
- Book
- Collection
- Dataset
- Event
- Thesis
- Interactive Res.
- Map
- Organization
- Personality
- Physical Object
- Project
- Report
- Scholarly Pub.
- Service
- Software

Activity

Could you further identify
Knowledge Assets you
recognized after sessions
so far?



KM tools and technologies





Summary

- The four major components of knowledge management are people, process, content/IT, and strategy.
 - **People** to lead, sponsor, and support knowledge sharing.
 - **Processes** to manage and measure knowledge flows
 - **Content/KA** – the actual knowledge we are talking about
 - **KM tools** that connect the right people to the right content at the right time.
 - A clear and documented **strategy** for using KM to meet the most important and urgent needs of the business.

KM Maturity

- **KM Maturity - The ability of an organization to leverage its use of knowledge in the most efficient, effective, and productive way**





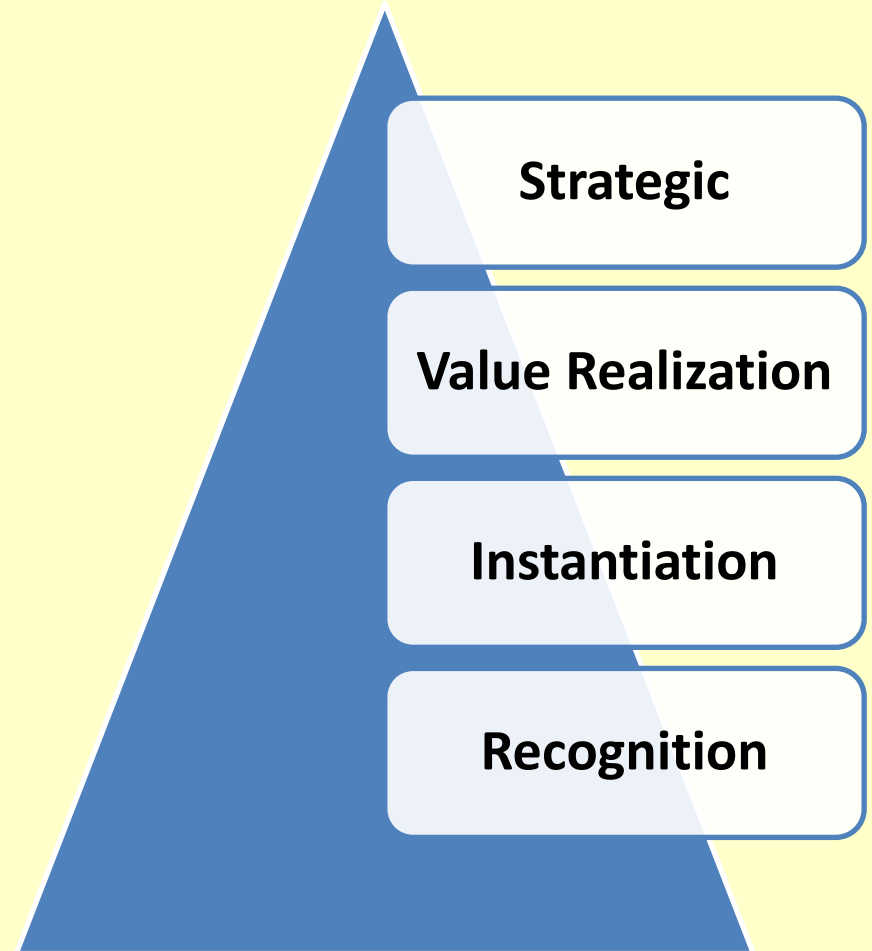
Reflection

Take a minute and think: How mature is ESS in terms of
KM capability?

How do you explain?

Cont...

- 4-Levels of Knowledge Management Maturity Model (By The Technology & Services Industry Association (TSIA))
 - Recognition,
 - Instantiation,
 - Value realization, and
 - Strategic



Cont...

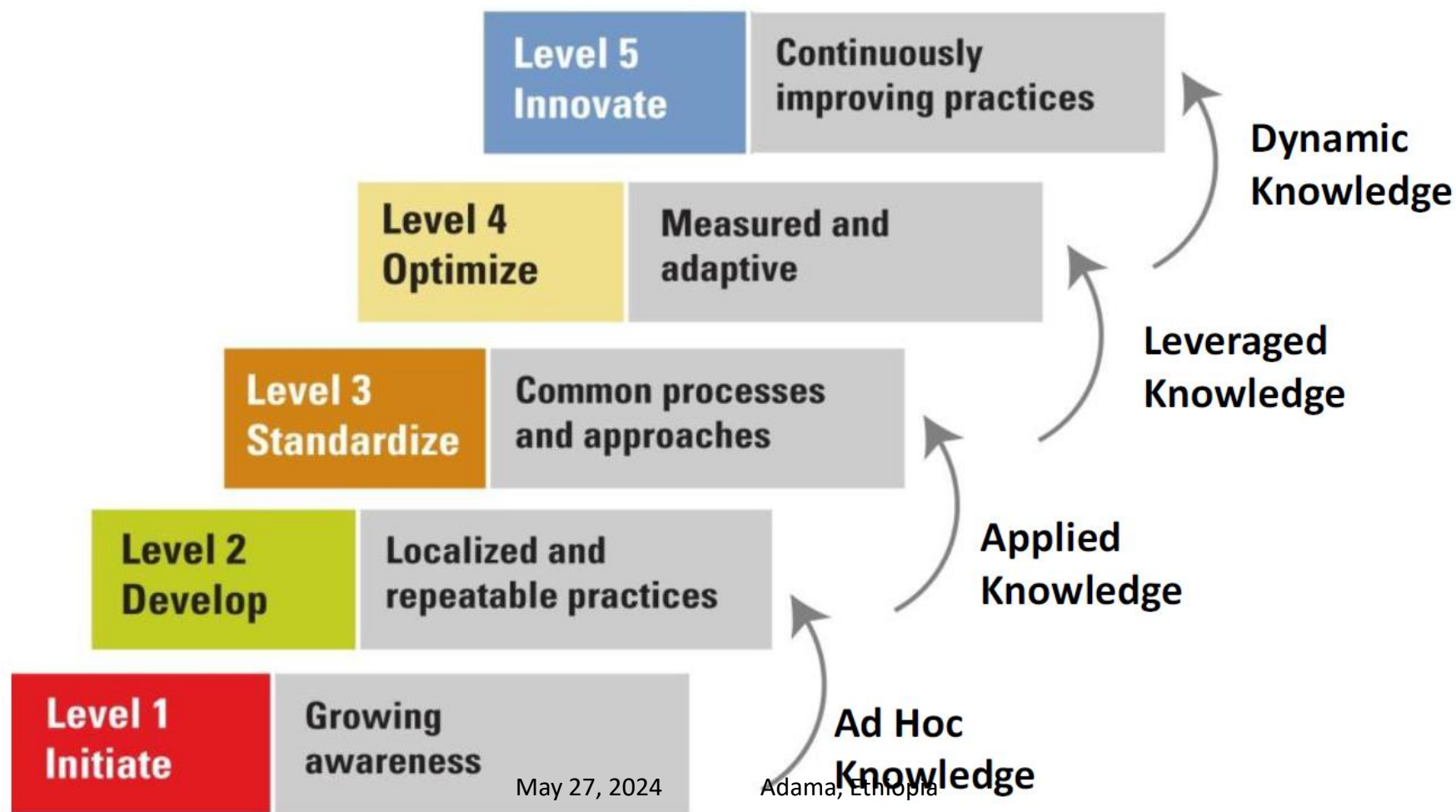
	Recognition Phase	Instantiation Phase	Value Realization Phase	Strategic Phase
 Corporate Culture	- Share knowledge and others take credit. - Employees recognized and rewarded for knowledge hoarding.	Executives realize potential to boost productivity and cut costs through enhanced knowledge sharing.	- Executives see ROI for KM programs. - Program expands beyond initial department(s).	- Executives lead by example and reward knowledge sharing. - Executives receive regular updates on KM programs. - Cross-enterprise knowledge czar appointed.
 People	- Informal collaboration. - Experts identified by topic. - No goals or incentives for knowledge sharing.	- Knowledge management training provided. - Goals/incentives introduced for KM outcomes. - Dedicated editing and maintenance resources.	- Employee: impacts to core productivity or revenue metrics. - Customer: rise in assisted and unassisted support CSAT, self-service success, and deflection; clickstream usage metrics for self-service, product catalog, or e-commerce.	- Customers involved in knowledge creation/maintenance. - Improved collaboration impacts service and sales delivery. - Long-term funding committed for dedicated KM resources.

Cont...

 Process	• No formal processes. • Knowledge tracked in email and transactional systems, not searchable repositories.	• Processes established for knowledge capture, publishing, and maintenance.	• Publishing process optimized. • Knowledge-sharing processes expand to additional departments.	• KM processes adopted enterprise wide (service, product, sales). • Development priorities tied to root causes identified by support KM.
 Technology	• Knowledge collected in multiple applications and repositories. • No unified search index or strategy.	• Employee/customer knowledge repository identified. • Unified search strategy in place.	• Knowledge maintenance automated. • Analytics identify content gaps, top/least-used content, relevancy. • Concept-based trend analysis.	• Infrastructure to further enable knowledge consumption, including search paradigms (chatbots) and formats (video, mobile). • Long-term funding committed for KM infrastructure improvements.

Cont...

APQC's Levels of Knowledge Management Maturity



Activity

Use TSIA model to
evaluate the level of ESS in
terms of KM capability
qualitatively?





Takeaway

- KM desk at ESS should start conduct the KM maturity assessment at ESS to document as a benchmark
- Holistic/systemic view has to be developed at ESS for the KM initiative to proceed.

Conclusion

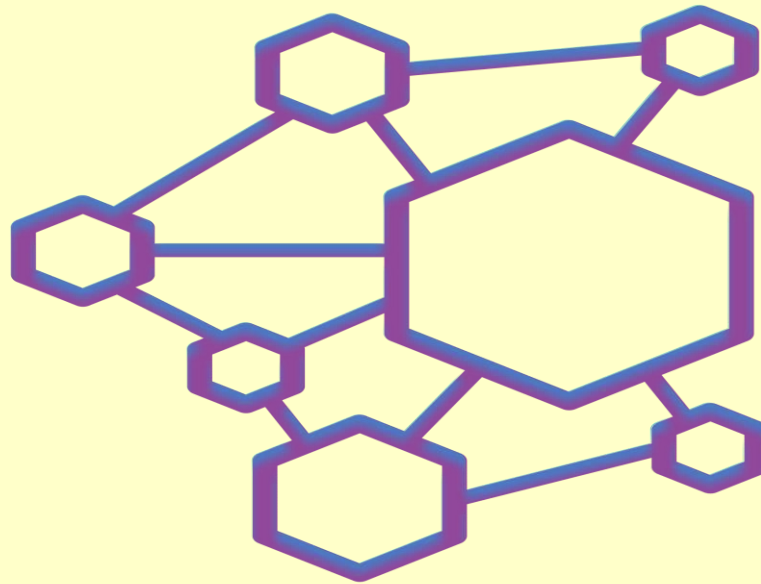
- Measuring KM maturity helps to know where an organization is in terms of KM capability
- For proper KM implementation attention should be given to all **five components**





KM Technologies

Module 3





Outline



- Objective
- Overview
- KM Technologies
- Takeaways



Objective



- To let trainees describe the three foundations of any Knowledge Management solutions/initiatives
- To let trainees list potential technologies for key KM processes.

Brainstorming Session

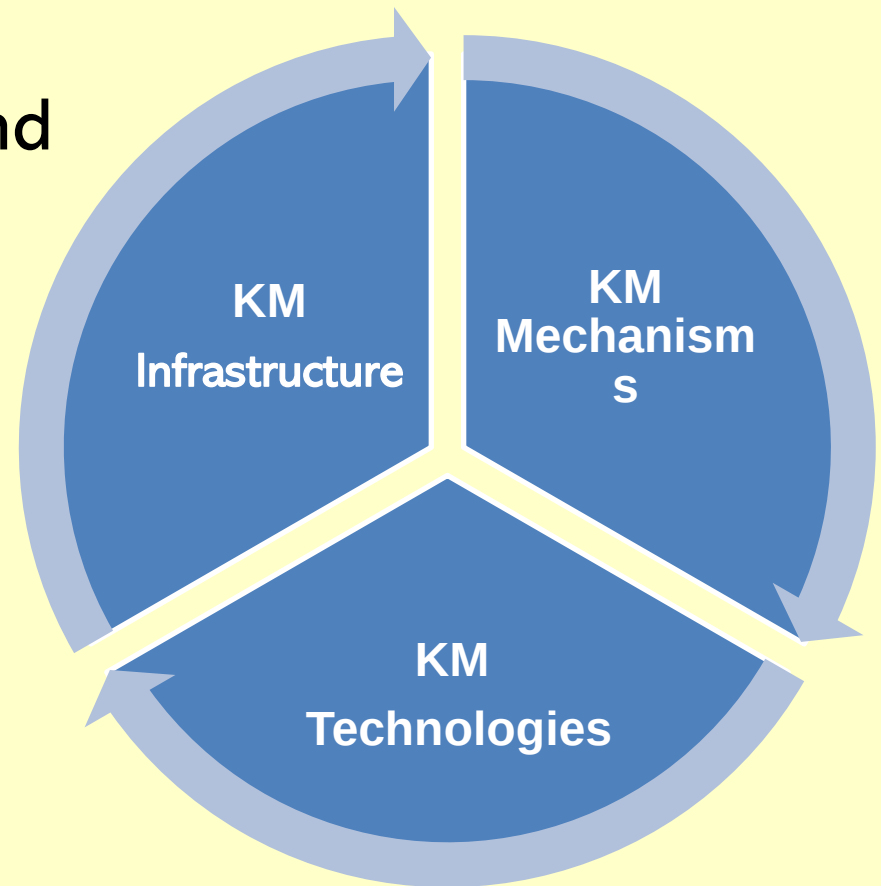
Question

What KM **tool** and/or technology you used so far ?



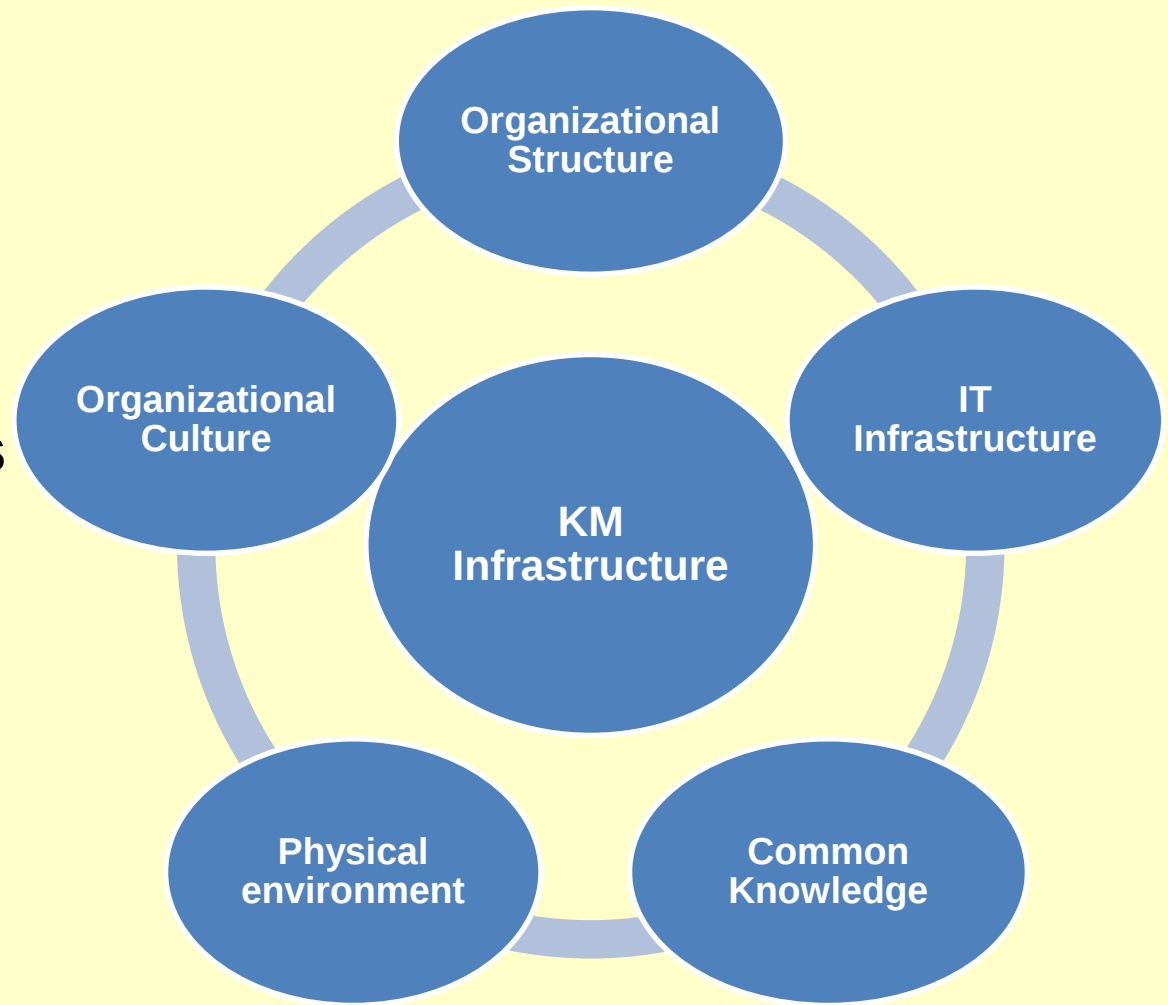
Overview

- Knowledge Management solutions/initiatives depend on three foundations:
 - **KM infrastructure**
 - **KM mechanisms**
 - **KM technologies.**



KM Infrastructure

- Knowledge Management **infrastructure** reflects the **long-term foundations** for knowledge management.



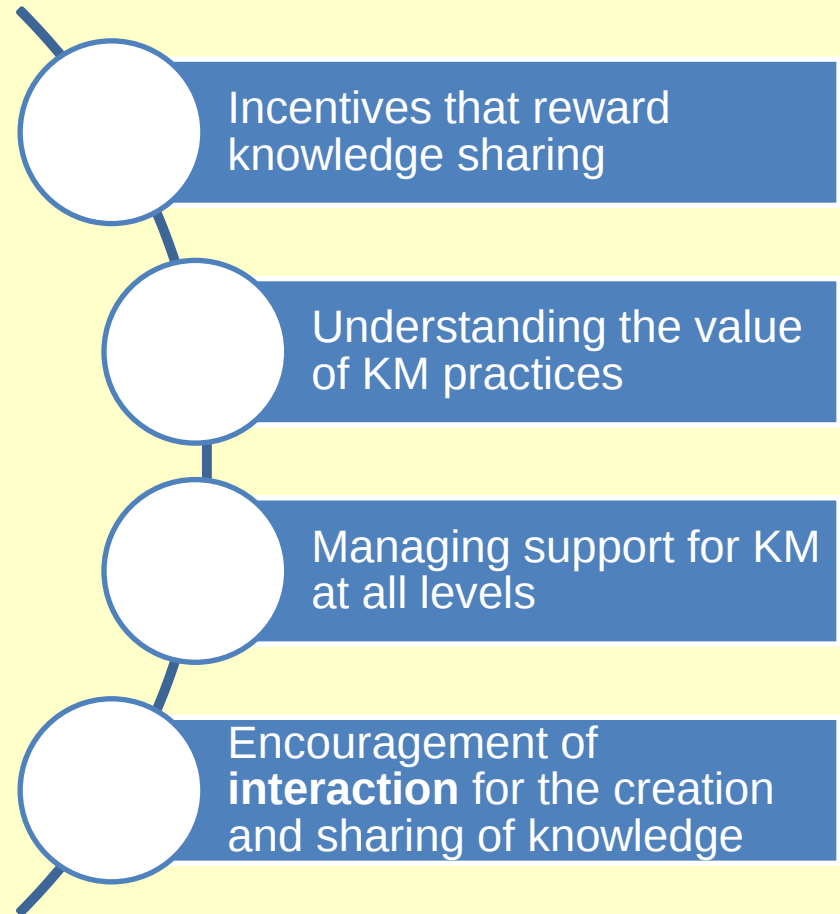


Cont...

- In an organizational context, **knowledge management infrastructure** includes five major components:
 - Organizational culture
 - Organization structure
 - Organization's IT infrastructure
 - Common knowledge, and
 - Physical environment

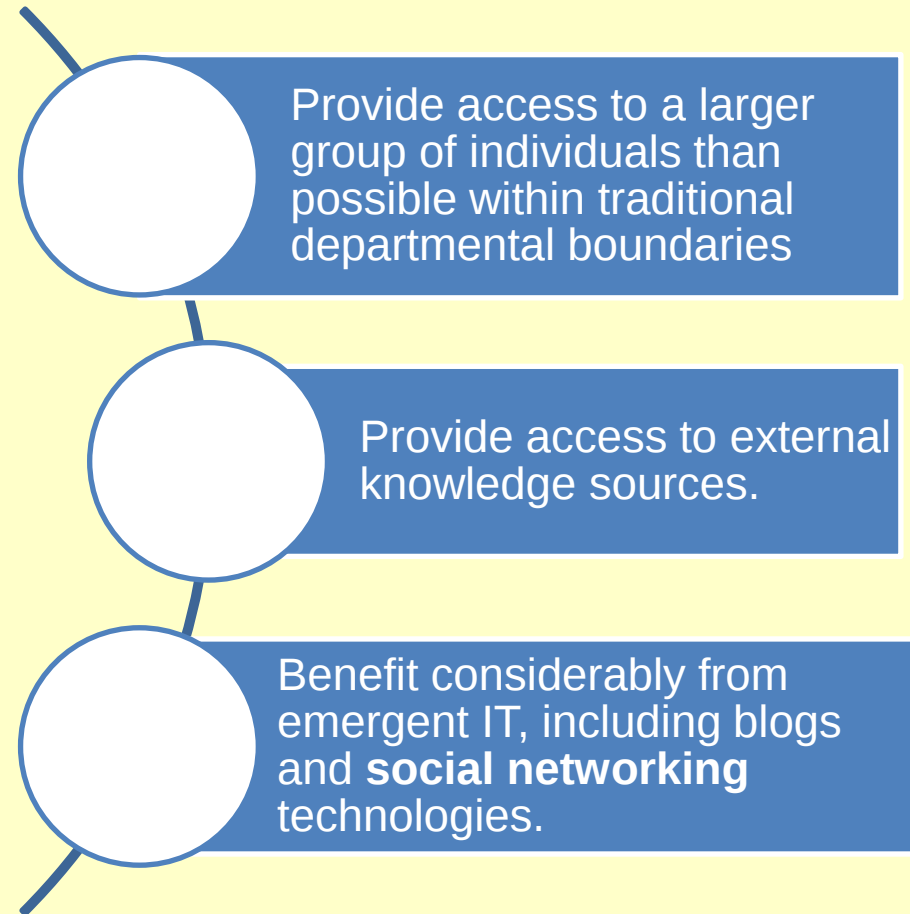
Cont...

- **Organization culture:** It reflects the norms and beliefs that guide the behavior of the organization's members.
- It is an important enabler of knowledge management in organizations.



Cont...

- **Organizational Structures:** Less hierarchical Organizational structures can facilitate knowledge management through communities of practice
- A community of practice is an **organic** and **self-organized** group of individuals



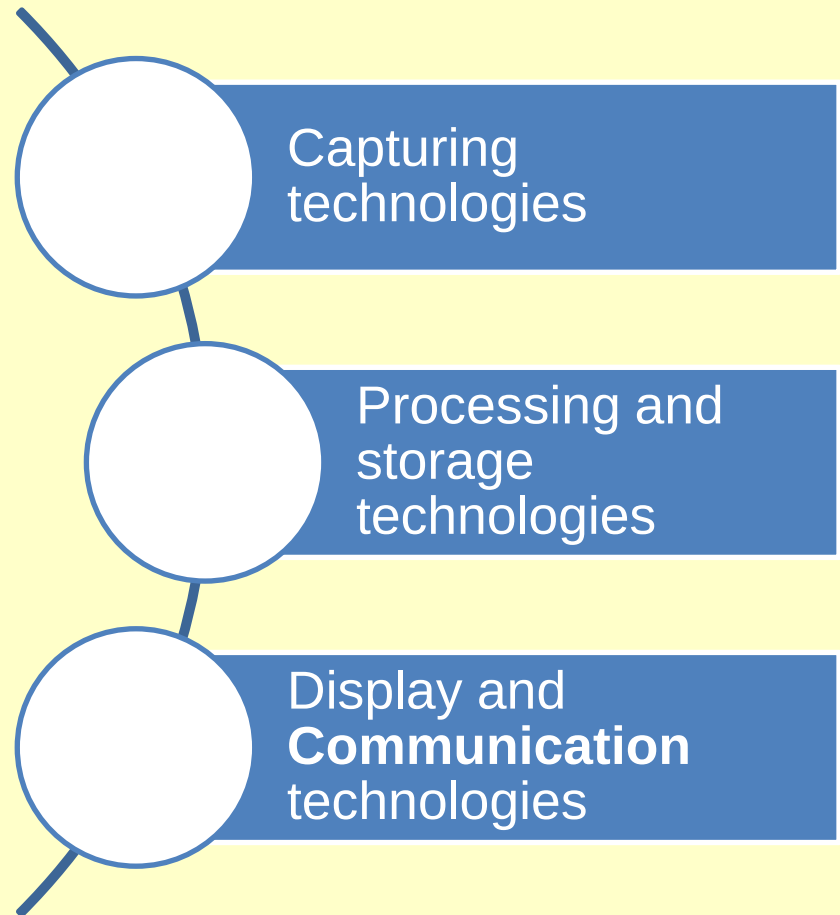


Reflection

Take a minute and think: In what way does IT infrastructure contribute to knowledge management within an organization? Please give some examples based on your experience and share with others.

Cont...

- **IT Infrastructure:** KM is also facilitated by the organization's **Information Technology Infrastructure**.
- Although certain IT and systems are directly developed to pursue KM, the organization's **overall** IT Infrastructure, also facilitates knowledge management.



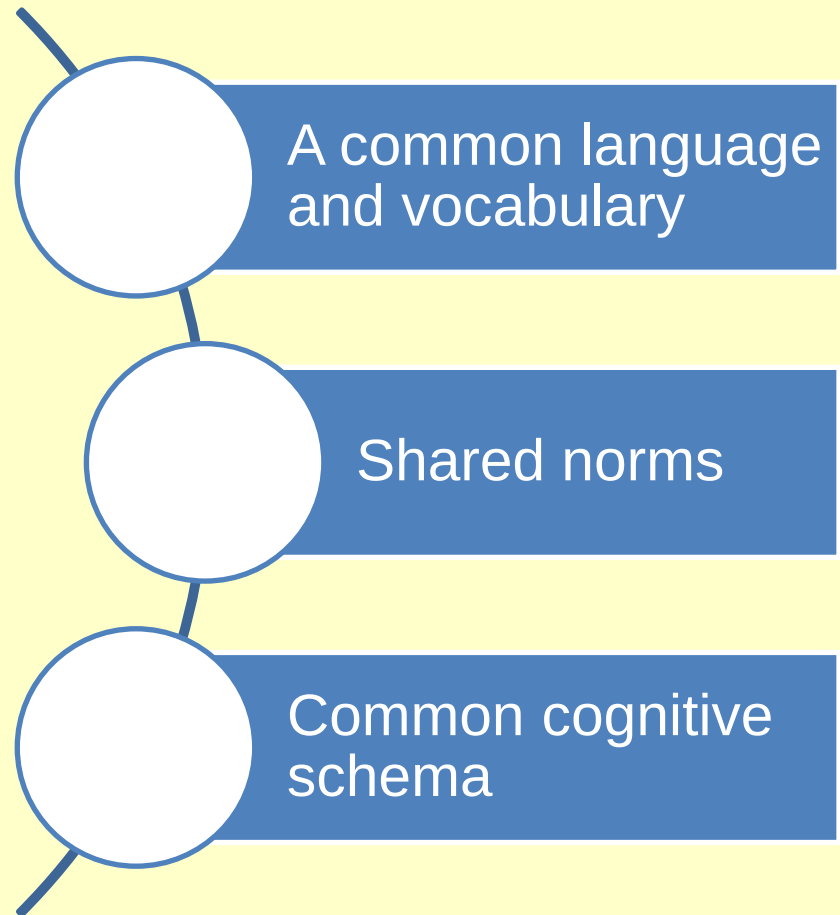


Reflection

Take a minute and think: What is common knowledge? What does it include, and how does it support knowledge management?

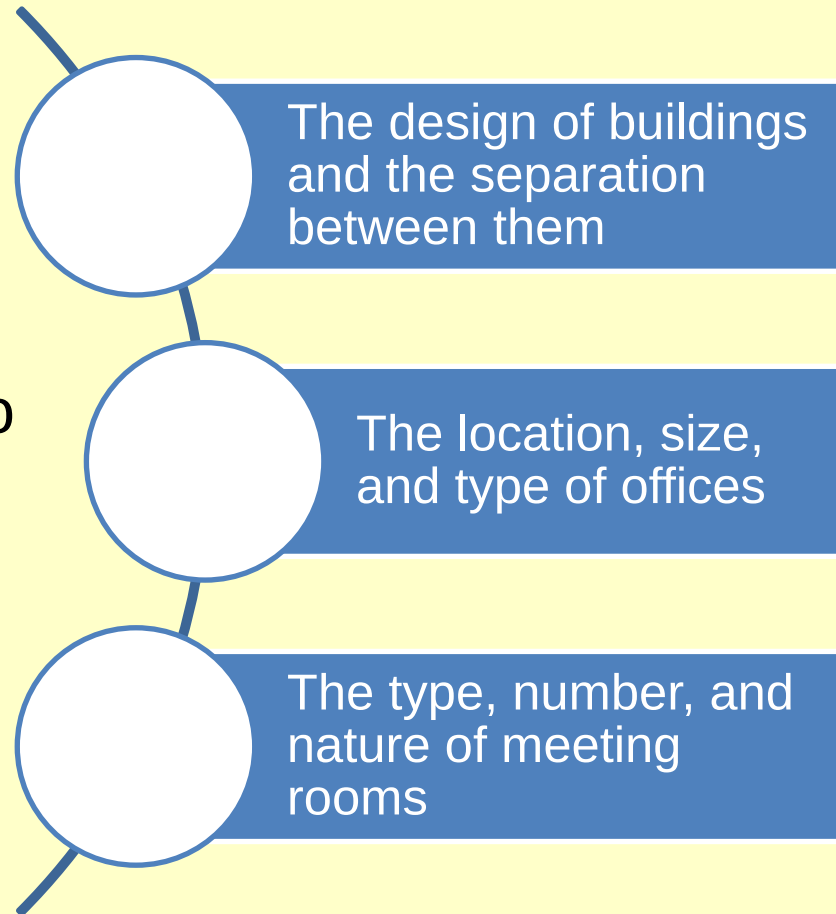
Cont...

- **Common Knowledge:** it represents another important component of the infrastructure that enables knowledge management
- Common knowledge helps **enhance** the value of an **individual expert's knowledge** by integrating it with the knowledge of others.



Cont...

- **Physical Environment** : It is often taken for granted, but it is another important foundation upon which KM rests
- It can foster KM by providing opportunities for employees to **meet and share ideas**.
- **Example** - Coffee rooms, cafeterias, water coolers, and hallways do provide venues where employees learn from and share insights with each other.



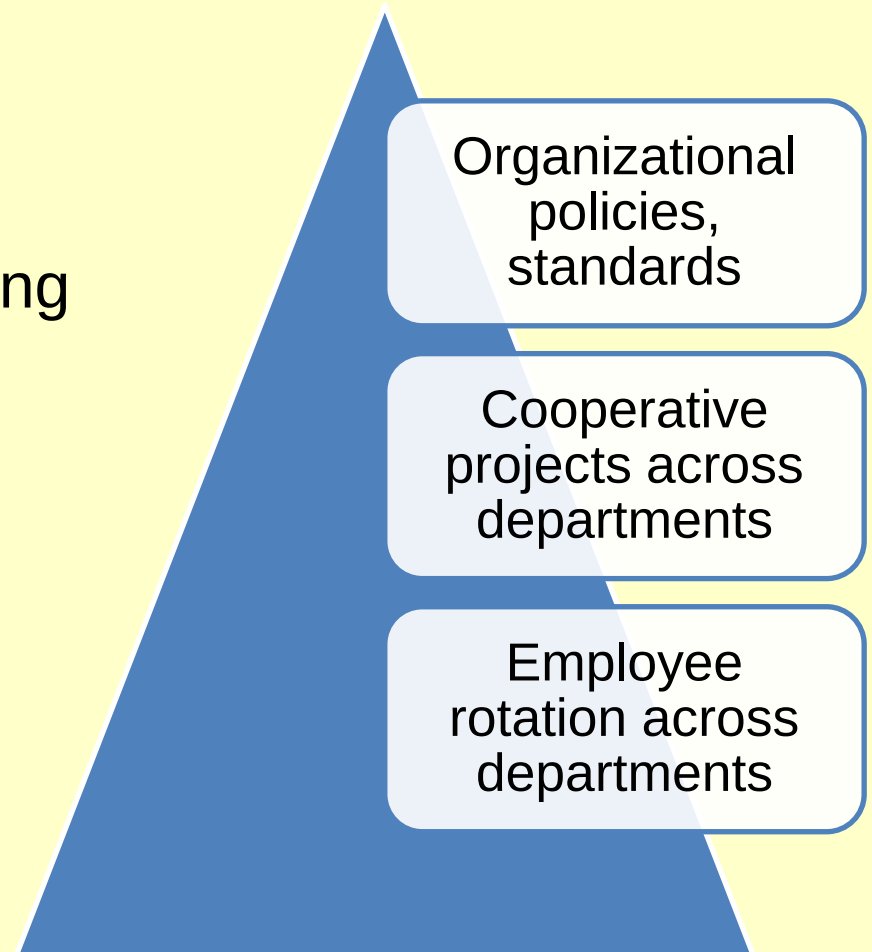


Reflection

Take a minute and think: Consider organizations where you have worked (including ESS) ; how did the physical environment supported and/or affected knowledge sharing or any other KM process?

KM Mechanisms

- KM Mechanisms are organizational or structural **means** used to promote knowledge management (Discovery, capturing, sharing and use).
- Examples of Knowledge Management Mechanisms include:
 - learning by doing,
 - on-the-job training,
 - learning by observation, and
 - face-to-face meetings.

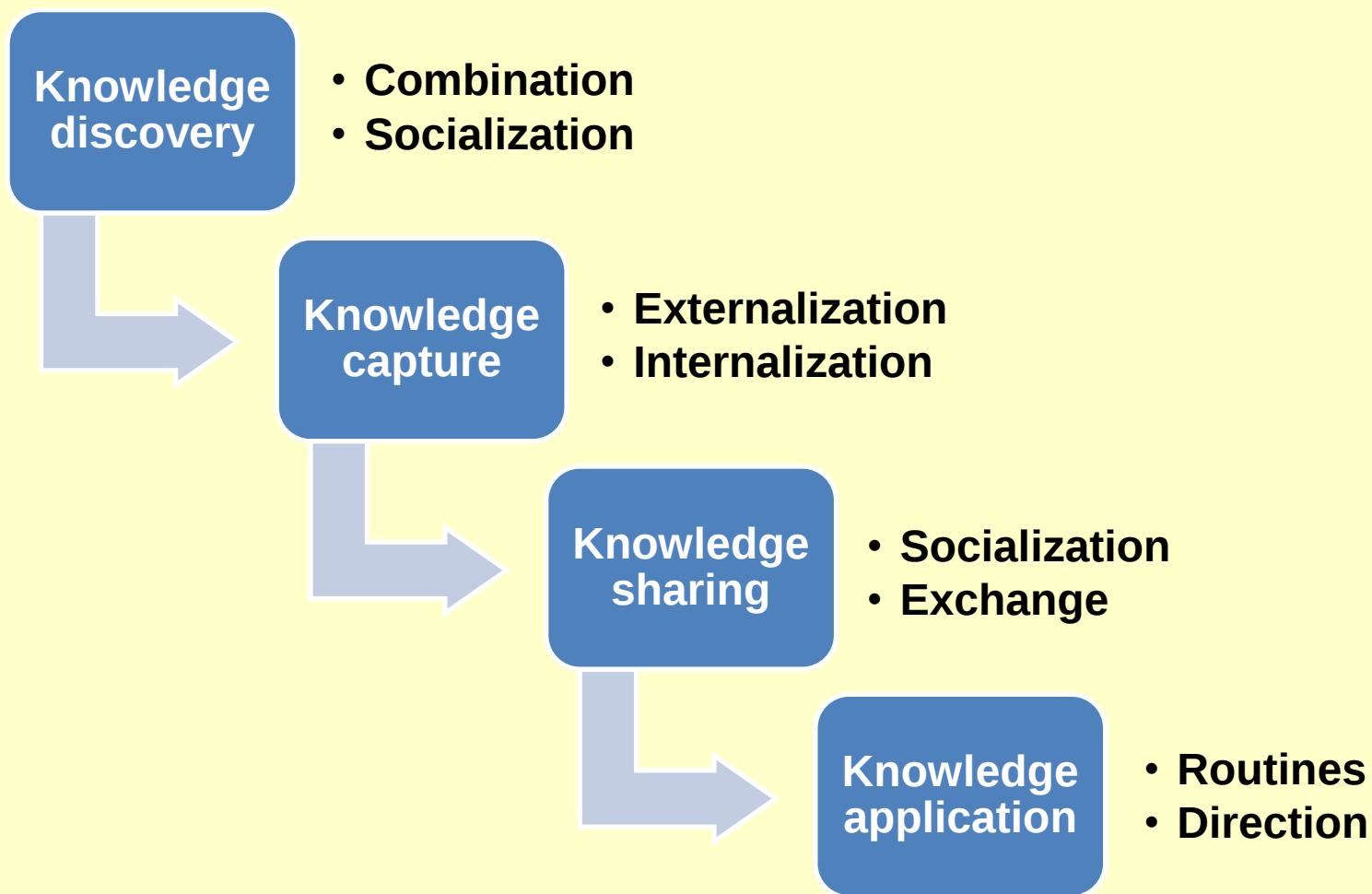




KM Technologies

- **Knowledge Management Technologies** are information technologies that can be used to **facilitate** knowledge management.
- **KM technologies vary based on their feature and focus**
- Technologies that support KM include **artificial intelligence** (AI) technologies including those used for knowledge acquisition and case-based reasoning systems, electronic discussion groups, computer-based simulations, expert systems, videoconferencing, **Web 2.0 technologies**, such as wikis and blog

Recall – KM process



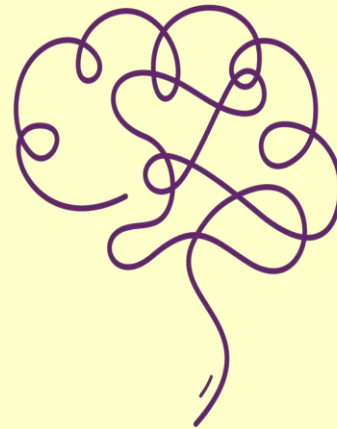
KM Technologies – Discovery

- **Knowledge Creation/discovery Systems** can be enabled by the use of **data mining (DM) technologies**.
- **Web Mining** (Content, usage, Structure) is used to discover what a Web page is about and how to uncover new knowledge from it.
- Electronic discussion groups, **Coveo**, access to web based repositories,



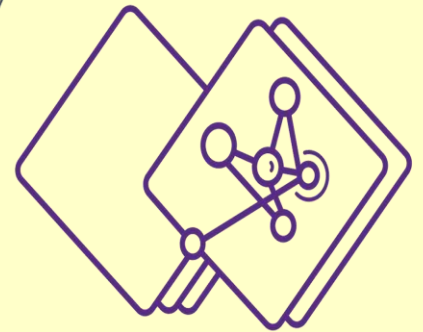
KM Technologies – Capture

- Knowledge capture is the process by which knowledge is converted from **tacit to explicit** form (residing within people, artifacts or organizational entities) and vice versa through the sub-processes of externalization and internalization



Tacit Knowledge

Highly internalized knowledge that is **difficult to articulate**, record, and disseminate. It can only be acquired through **experience** in a **relevant context**.



Explicit Knowledge

Knowledge that **has been made visible** by recording it, or embedding it, into a variety of formats: written documents, multimedia, and the design of processes, procedures, or tools.

Cont...

- IT systems can help capture knowledge that resides within or outside organizational boundaries. Some examples include
 - Concept/Mind mapping using tools like **MindManager**
 - Storytelling
 - Knowledge based systems/Expert systems
 - KM Repositories



KM Technologies – Sharing

- **Knowledge Sharing Systems** support the process through which explicit or tacit knowledge is communicated to other individuals.
- These systems are also referred to as **knowledge repositories**.



Cont..

- KSS are classified according to their attributes
 - Organizational repositories,
 - **Knowledge Portals**
 - Incident report databases
 - Alert systems ,
 - Best practices databases,
 - **Nuance Knowledge Management**
 - NextGen KMS
 - Expertise locator systems
 - Collaboration tools like **Microsoft SharePoint**
 - **Metadata Catalogs**
 - **Drupal open source KM platform.**



World Bank open knowledge repository -
<https://openknowledge.worldbank.org/home>

<https://ekmap.aau.edu.et/ekmap>

<http://213.55.95.41/acewm/>



EKM MaP

HOME

KNOWLEDGE ASSETS ▾

TOPICS ▾

COLLABORATION ▾

CONTACT



Data ▾

Explore ▾

News ▾

Guide ▾

Contact

About

Ag Datahub, Ethiopia



Search public data here

Search



አፍሪካ የውሃ ማንጅመንት የልህዋት ማዕከል አዲስ አበባ ዩኒቨርሲቲ

Africa Center of Excellence for water management
Addis Ababa University

ACEWM KNOWLEDGE MANAGEMENT SYSTEM



HOME

ABOUT US

KM SUBJECT (NEW) ▾

KNOWLEDGE ASSET (KA) ▾

KA SUBJECT ▾

KA FORMAT ▾

FAQS

CONTACT US

May 27, 2024 Adama, Ethiopia





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EthioStat Digital Archive

Empowering Data Access Knowledge Discovery

The "EthioStat Digital Archive" serves as the premier digital library system offered by the Ethiopian Statistical Service (ESS), designed to facilitate seamless access to a comprehensive collection of statistical data, reports, publications, and research materials.

By providing a centralized hub for statistical data and research materials, the EthioStat Digital Archive plays a pivotal role in advancing evidence-based decision-making, fostering innovation, and driving socioeconomic development in Ethiopia.

 Search

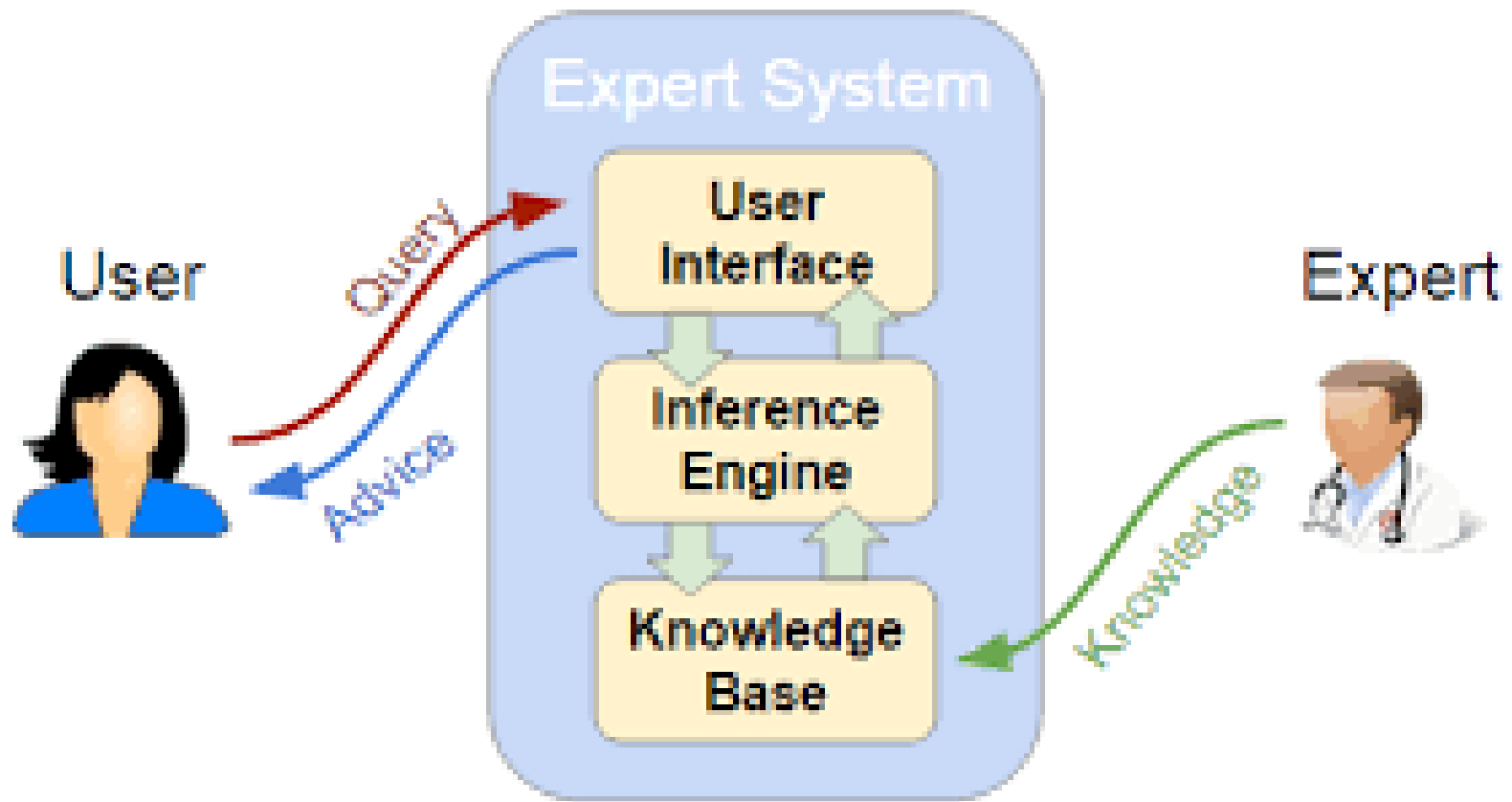
ESS Knowledge

Categories

KM Technologies – Application/use

- **Supports** the process through which individuals utilize knowledge possessed by other individuals without actually acquiring, or learning, that knowledge.
- Knowledge application technologies, which support direction and routines includes:
 - Expert systems
 - Decision support systems
 - Advisory systems
 - Help desk systems

Cont...



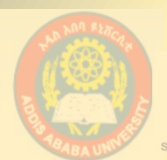
Activity

Group Activity

Use **mind mapping** techniques to represent your understanding of contents in this module

ACTIVITY





All in one

KM Processes	KM Systems	KM Subprocesses	Illustrative KM Mechanisms	Illustrative KM Technologies
Knowledge Discovery	Knowledge Discovery Systems	Combination Socialization	Meetings, telephone conversations, collaborative creation of documents Employee rotation across departments, conferences. brainstorming retreats, cooperative projects	Web-based access to data, data mining, Web portals, best practices and lessons learned Videoconferencing, electronic discussion groups, e-mail
Knowledge Capture	Knowledge Capture Systems	Externalization Internalization	Models, prototypes, best practices, Learning by doing, on-the-job training, learning by observation, and face-to-face meetings	Expert systems, chat groups, best practices, lessons learned databases , AI-based knowledge acquisition, computer-based simulations



Cont...

KM Processes	KM Systems	KM Subprocesses	Illustrative KM Mechanisms	Illustrative KM Technologies
Knowledge Sharing	Knowledge Sharing Systems	Socialization Exchange	Employee rotation across departments, conferences, brainstorming retreats, cooperative projects Memos, manuals, letters, presentations, use of systems	Videoconferencing, electronic discussion groups, e-mail, Team collaboration tools, Web-based access to data, databases, and repositories of information, best practices databases, lessons learned systems, expertise locator systems
Knowledge Application	Knowledge Application Systems	Direction Routines	hierarchical relationships in orga., help desks, support centers, Organizational policies, work practices, standards	Troubleshooting systems, case-based reasoning systems, decision support systems, Expert systems, ERP systems, Collaboration tools



Takeaway

- Recognize the role of organizational context (KM infrastructure) and Mechanisms in KM
 - Start to shape your environment so that it is conducive for appropriate KM
- **Identify** and start using KM technologies at both **individual** and **organization** level

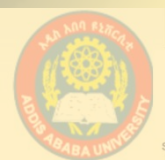
Conclusion

- There are three basic foundation for any KM solutions
- KM technologies are one of such foundations
- KM technologies vary based on the KM process





Knowledge Management Process/**Cycles** Module 4



Module objectives



- Trainees will be able to:
 - Explain KM cycles
 - Recognize different KM models
 - Describe activities in each phase of KM process
 - Understand the implication of KM process for effective KM



Module Topics



- KM cycle
- SECI Model
- Knowledge spiral
- Generic KM Processes



KM process

- KM process is a sequence of activities that facilitate knowledge conversion into organizational value
- It explains how knowledge is captured, processed, and distributed in an organization.
- The two popular KM processes are
 - Nonaka's SECI Model
 - *The Generic KM cycles*



Nonaka's SECI Model



- Nonaka and Takeuchi are arguing that **creating knowledge** is a key to competitive advantage
- **Business environment** and **customer preferences** changes constantly, **knowledge perishes quickly**.
- They developed the model based on Tacit to Explicit Knowledge conversion

SECI Model

Socialization

Externalization

Tacit to
Tacit



Tacit to
explicit



Explicit
to Tacit



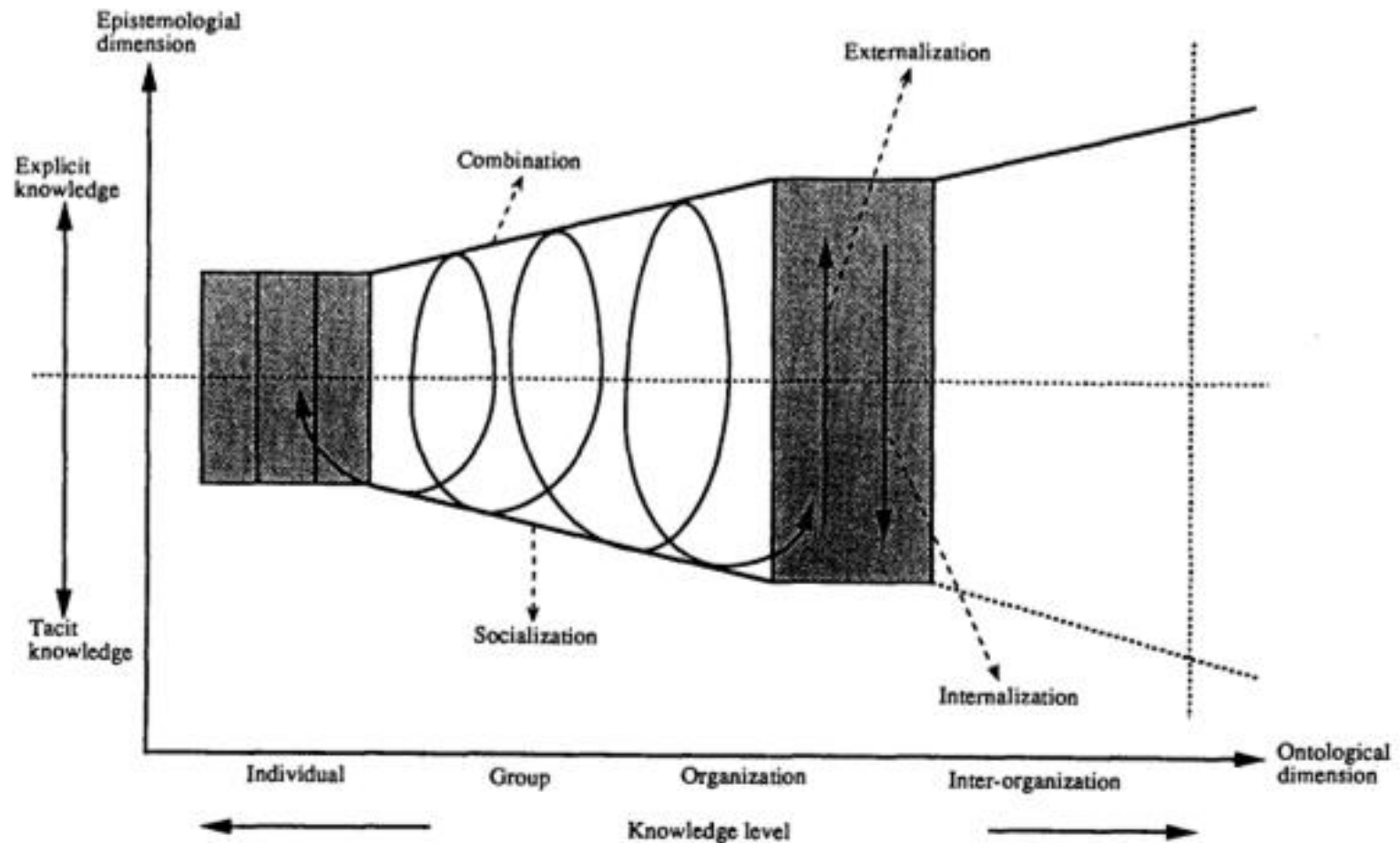
Explicit
to
Explicit



Internalization

Combination

Spiral of Organizational Knowledge Creation



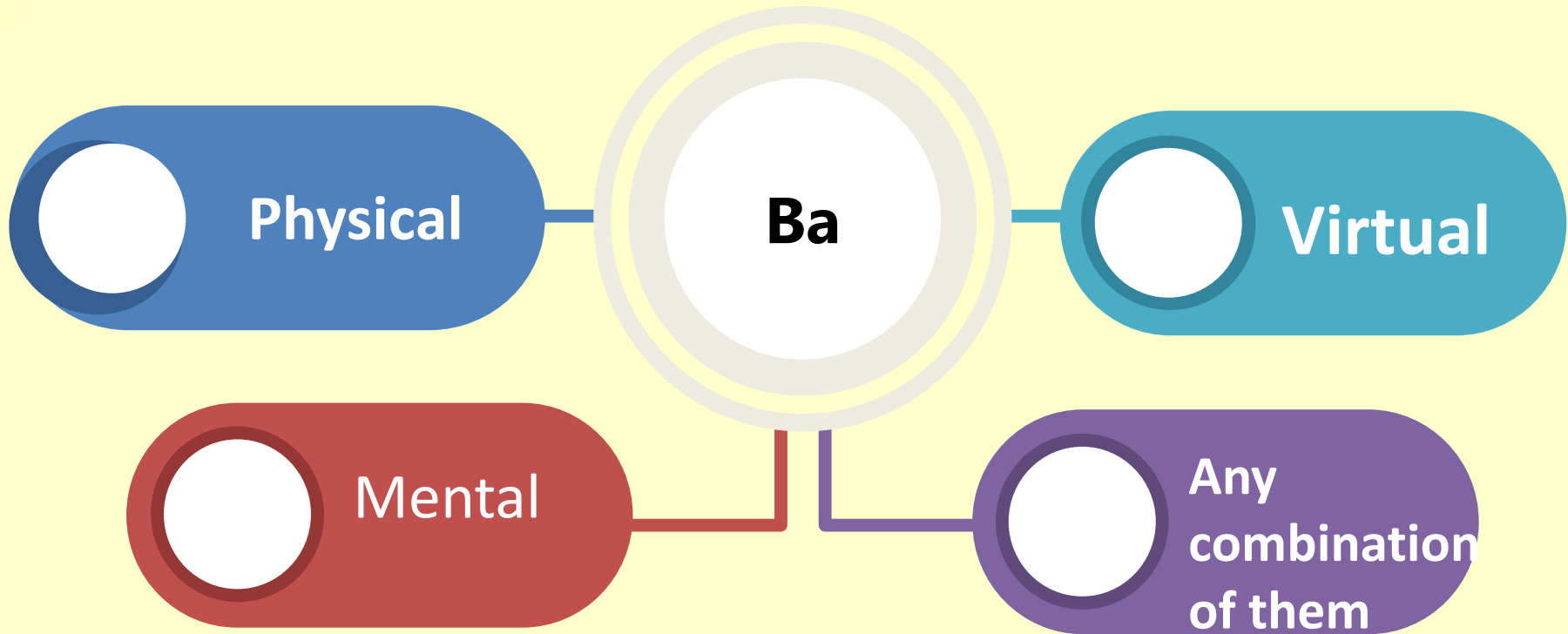


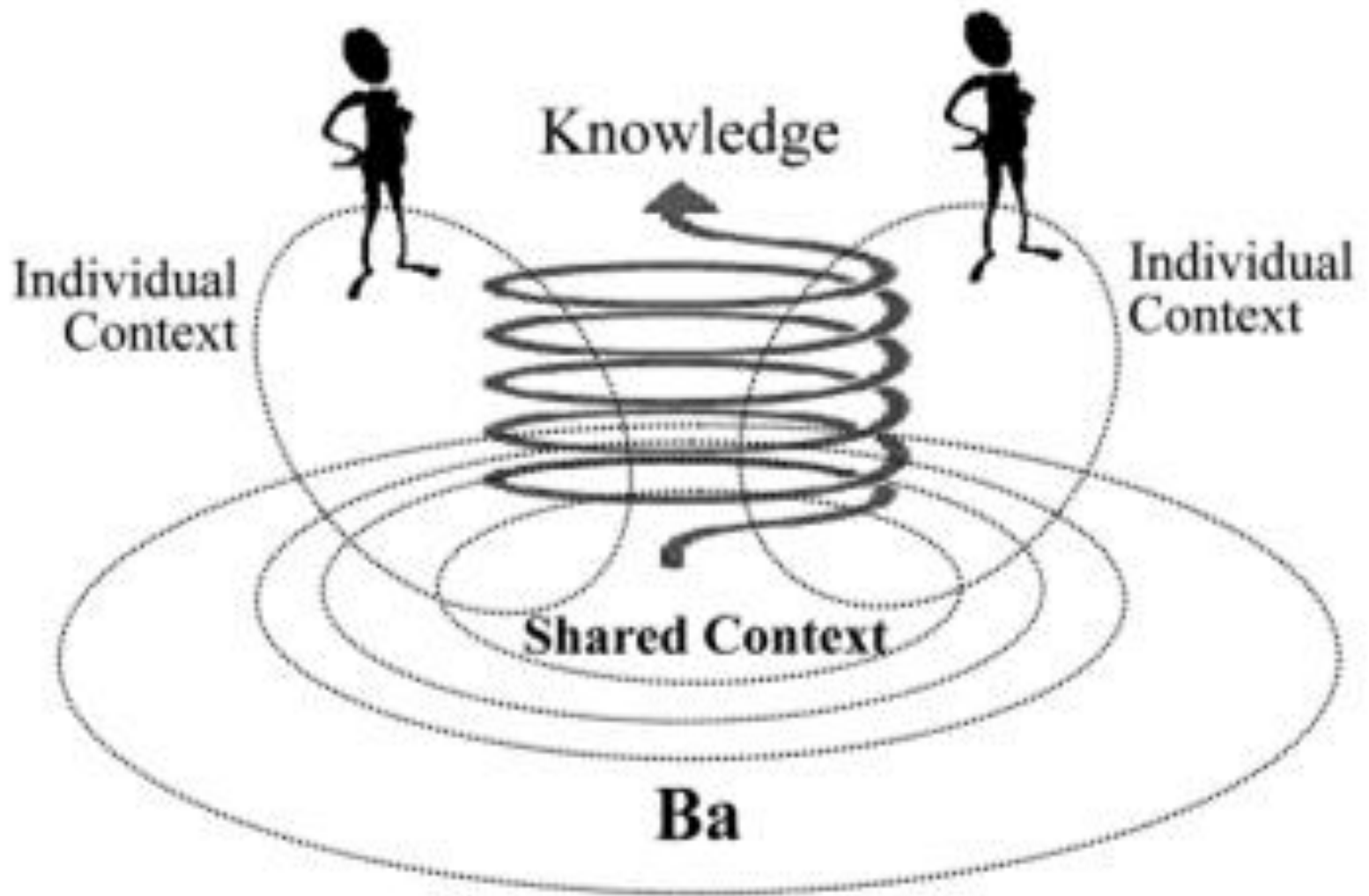
Ba – a Japanese word



- *Ba*, the space where individuals relate to each other and create knowledge
- Ba provides a platform for increasing individual and/or collective knowledge.

Type of Ba



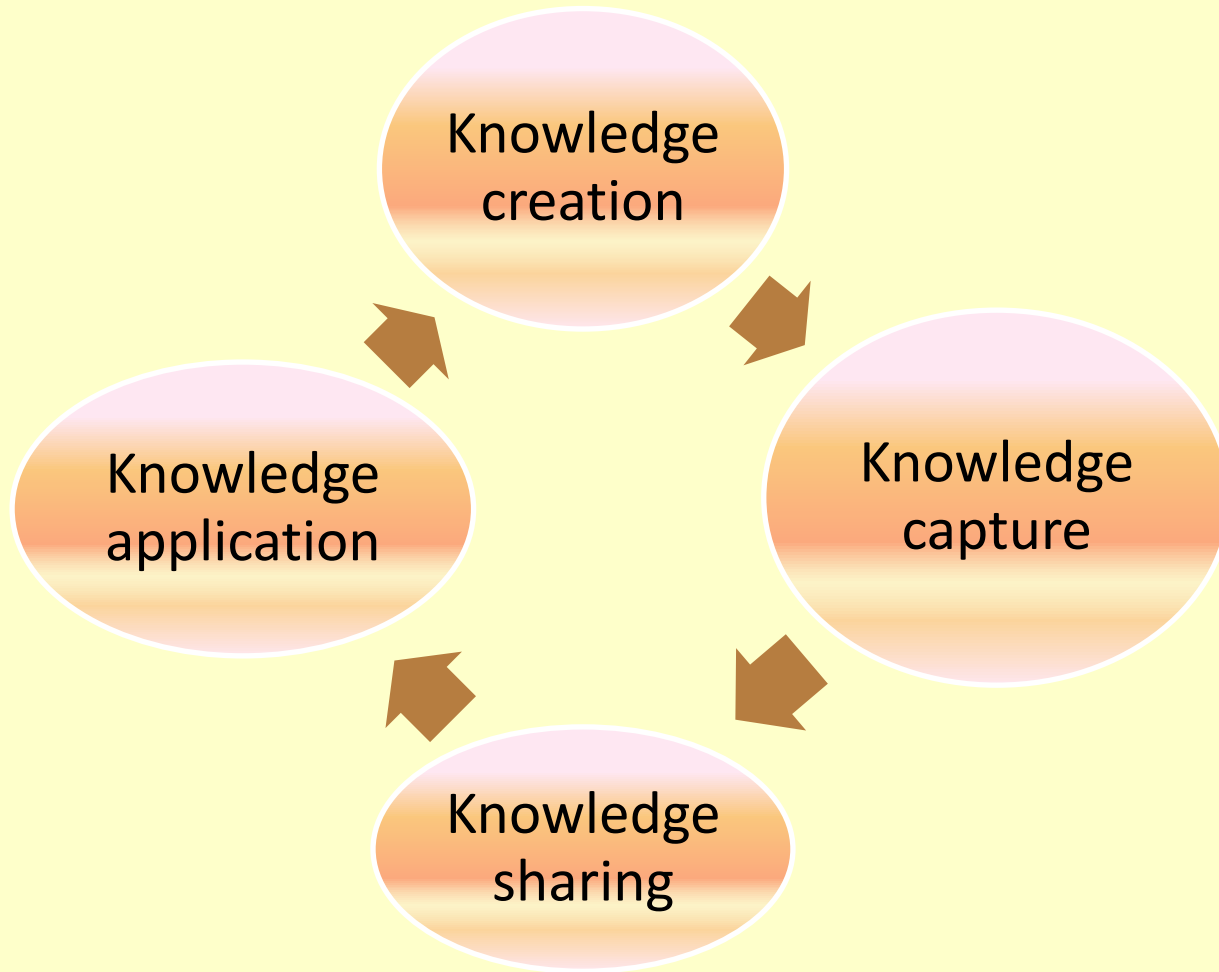


Discussion



- Using SECI Model, list down different ways knowledge is created and shared at ESS
- What is the weakness of the current KM practice at ESS
- Present your findings

Basic Cycles of KM





Knowledge creation

- SECI Model explains the Knowledge creation Process
- **Cross-functional project teams** serve a great catalyst for new knowledge creation
- Spreads knowledge throughout the organization
- Technologies like **collaborative tools and data mining** facilitate knowledge creation

Knowledge Capture

- Knowledge-capture refers to collecting, documenting, and storing valuable information, insights, experiences, and expertise
- Focus to capture **knowledge that are required in different locations and take long time to create**



Explicit

- Documentation and manuals
- Lessons learned sessions
- Interviews and surveys
- Digital Knowledge repositories
- Collaborative platforms

Knowledge
capture

Tacit

- Mentoring and coaching
- Storytelling workshops
- Communities of practice
- Social network analysis

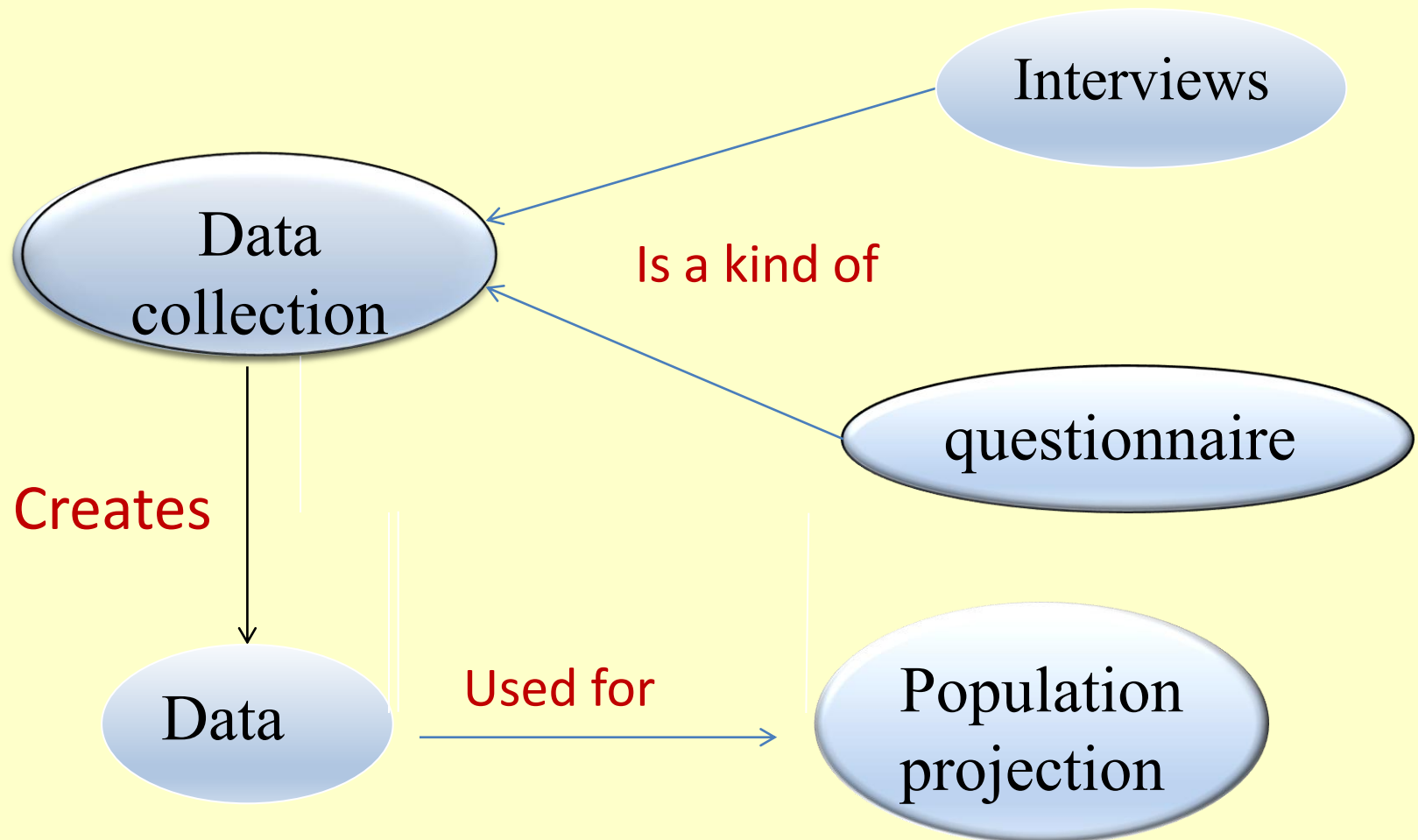
Knowledge Storage

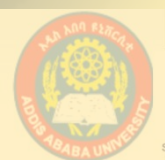
- Knowledge storage involves activities that classify, map, index, and categorize knowledge
- Promotes knowledge reuse
- Improves cost saving and organizational efficiency
- Taxonomies and ontology are used as blue print to classify and organize knowledge





Simple example of Knowledge Capture through Concept map





Ontology

- An ontology is a formal, explicit specification of a shared conceptualization.
- **Formal** refers to machine-readable,
- **Shared** refers to agreed upon by a group and
- **Conceptualization** is what defines an abstract model describing a particular field of knowledge.

Ontology based knowledge storage

Alphabetical	Hierarchy	products > Plant products > Fruits > Pome fruits	
← Cut foliage ← Fruits Acorns Akee Avocados Bananas carambola Cherimoyas ← Citrus fruits Bergamot orange Calamondins Citranges Citrons Clementines Grapefruits Lemons Limequats Limes Mandarins Orangequats		PREFERRED TERM	Pome fruits
		CONCEPT TYPE	Concept
		BROADER CONCEPT	Fruits
		NARROWER CONCEPTS	Apples
			Pears
			Quinces
		IN OTHER LANGUAGES	Frutas de pepita (es)
			malvice (sk)
			malvice (cs)
			仁果类 (zh)
			仁果類 (ja)
			ໝາກພືດ (lo)
			Fruits à pépins (fr)
			میوه‌های هسته‌دار (fa)
			...

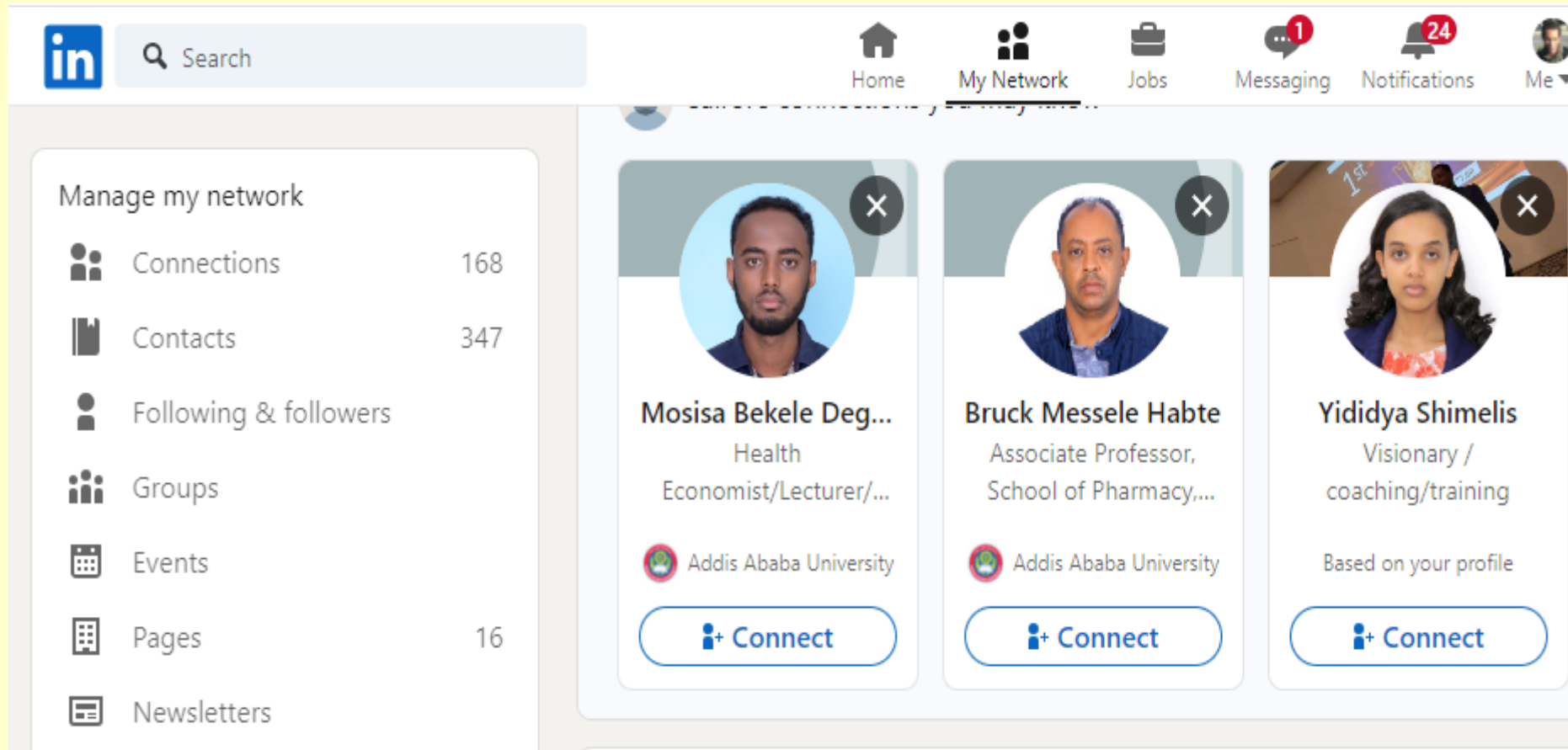


Tacit knowledge organization

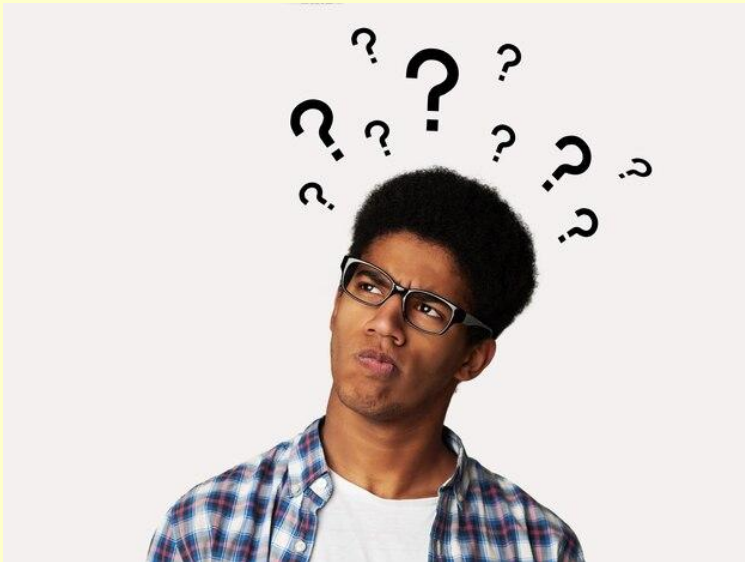


- Tacit knowledge is stored using **expertise locators database** such as corporate yellow pages and other knowledge maps
- The database contains expert qualification, experience, contact address and other relevant information
- Used to locate the valuable tacit knowledge sources

LinkedIn is the best-known public expertise locator



Discussion



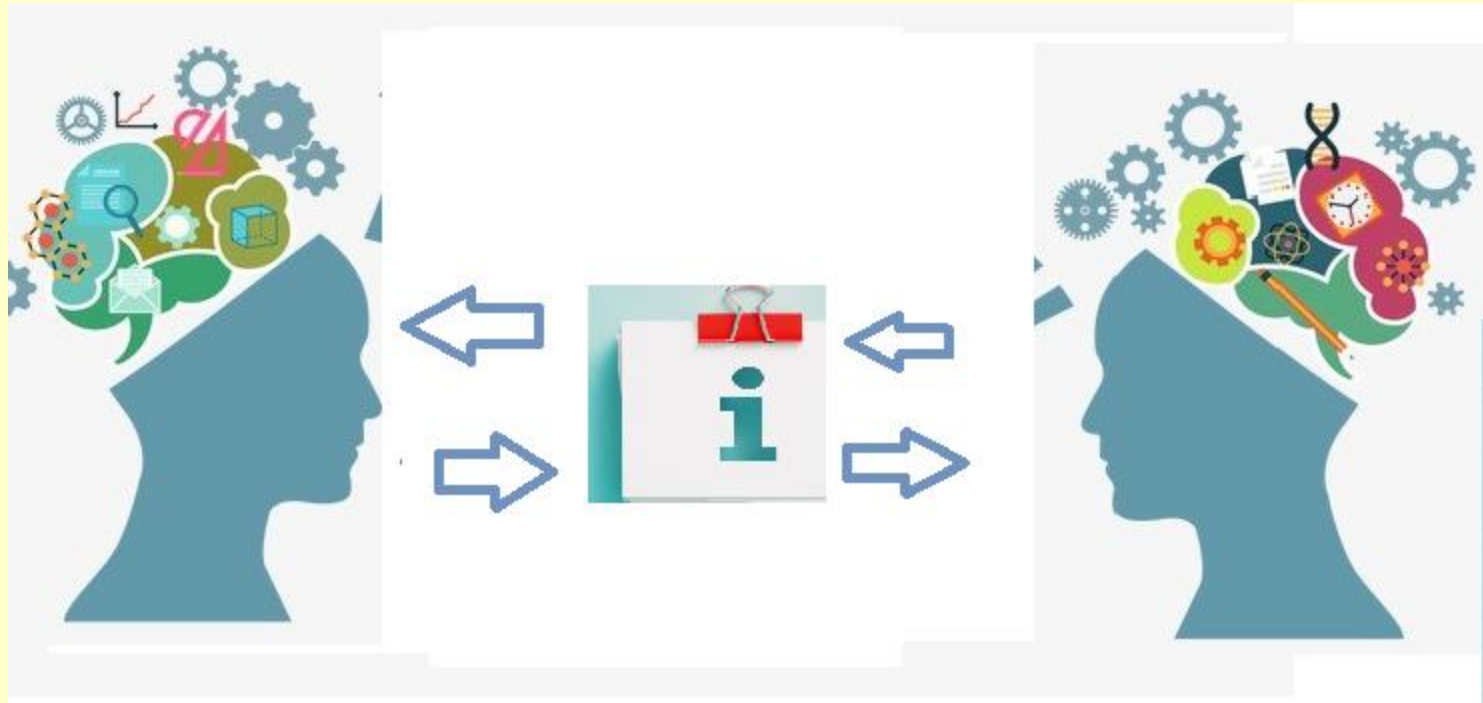
- Select one domain and try to create the concept map of that domain knowledge at ESS using concept maps

Knowledge Sharing

- **Knowledge sharing** means the exchange of employees' knowledge, skills, and experiences
- Makes the **right knowledge** available to the **right people** at the right time.
- Done through push or pull methods



Knowledge Sharing





Knowledge sharing

- Knowledge sharing requires
 - Organizational recognition
 - Positive attitude both by knowledge owners and knowledge seekers
 - Skills to share knowledge
 - Incentives to compensate for knowledge shared
 - Appropriate technology in place

- Explicit

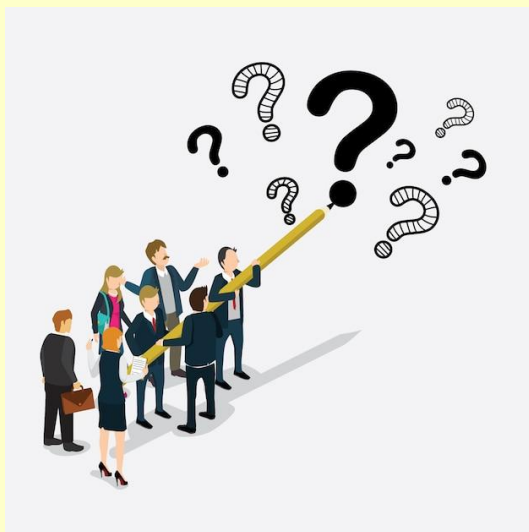
- Documentation and manuals
- Lessons learned sessions
- Interviews and surveys with subject matter experts
- Digital Knowledge repositories
- Collaborative platforms to share real-time information, updates, and insights.

Knowledge Sharing Mechanisms

- Tacit

- Mentoring and coaching of coach junior colleagues
- Storytelling workshops
- Communities of practice
- **Informal networks**
- Social network analysis

Reflection



- Discuss common knowledge sharing practices at ECSS
- How can it be improved?



Knowledge Application



- Creation of new value by applying knowledge
- Solving problems in a novel way, creating new products and services, etc
- By embedding knowledge in software, new employees can quickly learn new knowledge
- Knowledge application technologies include like AI and decision support

Direction

- individual possessing the knowledge directs the action of another individual.
- Mechanisms for direction include hierarchical relationships, helpdesks, and support centers

Types of
Knowledge
application

Routines

Routines involve the utilization of knowledge embedded in procedures, rules, and norms that guide future behavior.



Conclusions

- Described the key aspects of knowledge management
- Provided a working definition of knowledge management
- Examined knowledge management solutions at four levels
 - KM processes
 - KM systems
 - KM mechanisms and technologies
 - KM infrastructure

Case study at ECSS

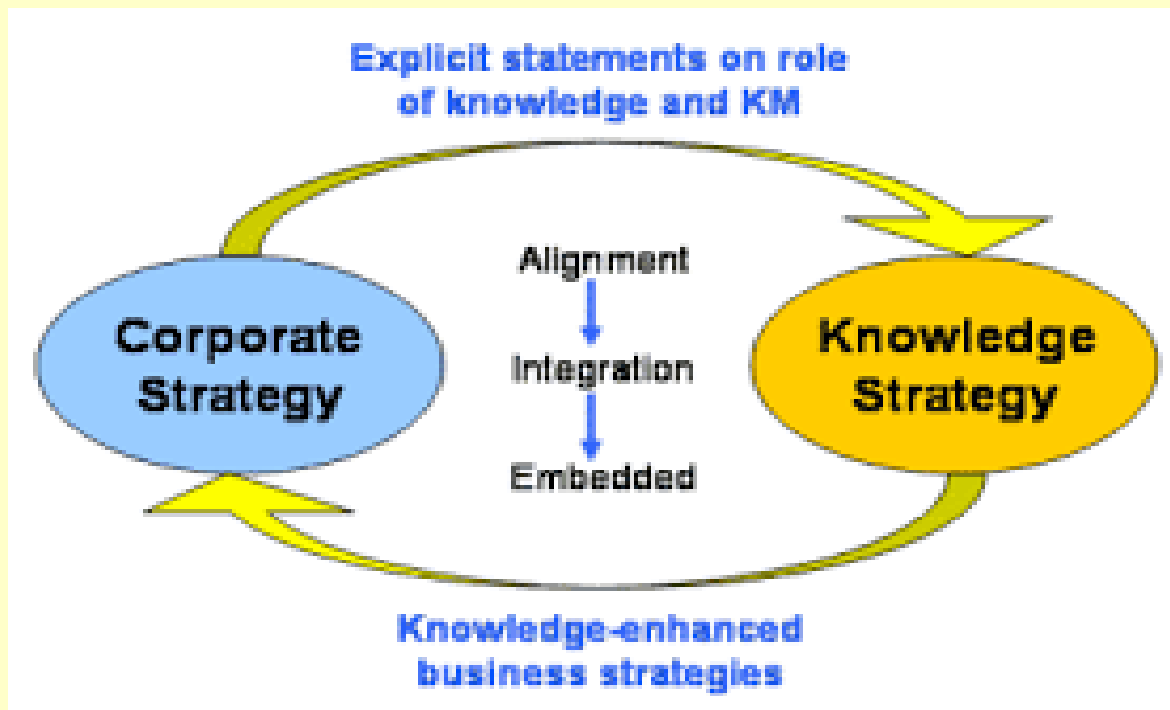


- ESS has long year of experience in conducting population census and accumulated rich knowledge resources in surveys and census. However, the manger of ESS learn that this knowledge is not shared. Only few employees possess the knowledge. What knowledge application method can you use to promote this experience sharing and its application in the organization routine activities?



KM Strategy Development

Module 5





Outline



- Objective
- Overview
- 8-Steps guide for KM strategy Dev.
- Takeaways



Objective



- To let trainees understand the importance of KM strategy
- To let trainees identify elements and process of KM strategy development

Brainstorming Session

Question

Why do we need a
KM Policy/strategy?



Overview

- A KM strategy is a **plan for organizing, capturing, sharing, and using an organization's collective knowledge, information, and expertise to improve its performance and achieve its goals.**
- It will happen once you have a **KM policy** (as part of organizational policy or a separate one)

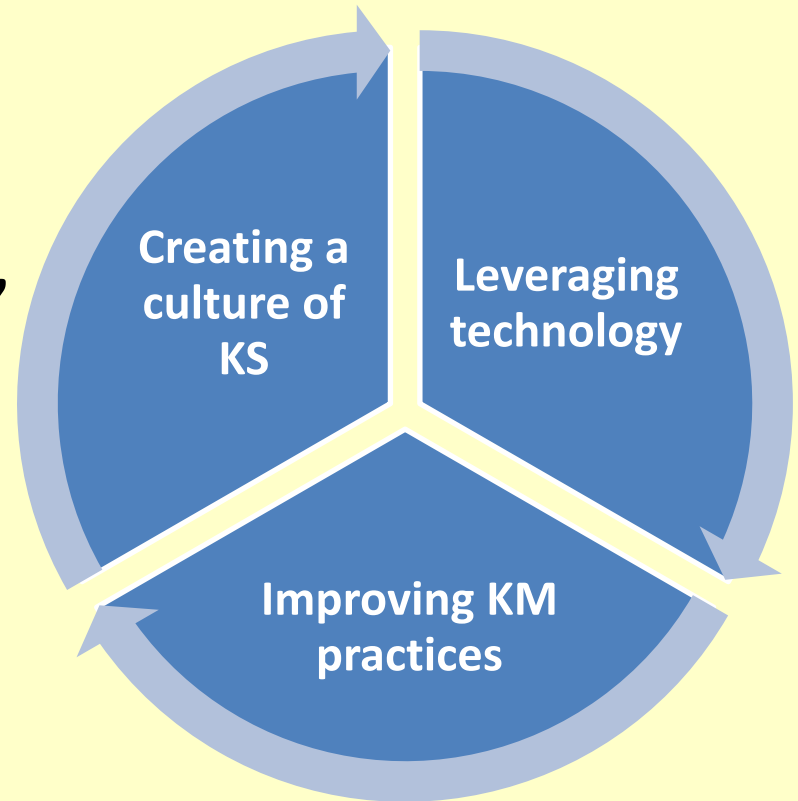


Cont...

- The policy document will cover elements such as
 - Policy Goal, Objective and Guiding principle
 - Policy Provision (Policy statement for KM)
 - Accountabilities
 - Required behaviors
 - Required processes
 - Applicability
 - Linkage with other policies, if appropriate
- The KM Policy sets the standard for Knowledge Management within an organization.
- It ensures that everyone knows what is expected of them in terms of Knowledge Management, and why this is important to the organization.

Cont...

- The overall goal of a KM strategy/policy is to help organizations become **more efficient, innovative,** and **competitive** by leveraging the knowledge and expertise of their employees and other stakeholders.



8-Steps guide for KM strategy Dev.

- **Step -1 - Define your goals and objectives**

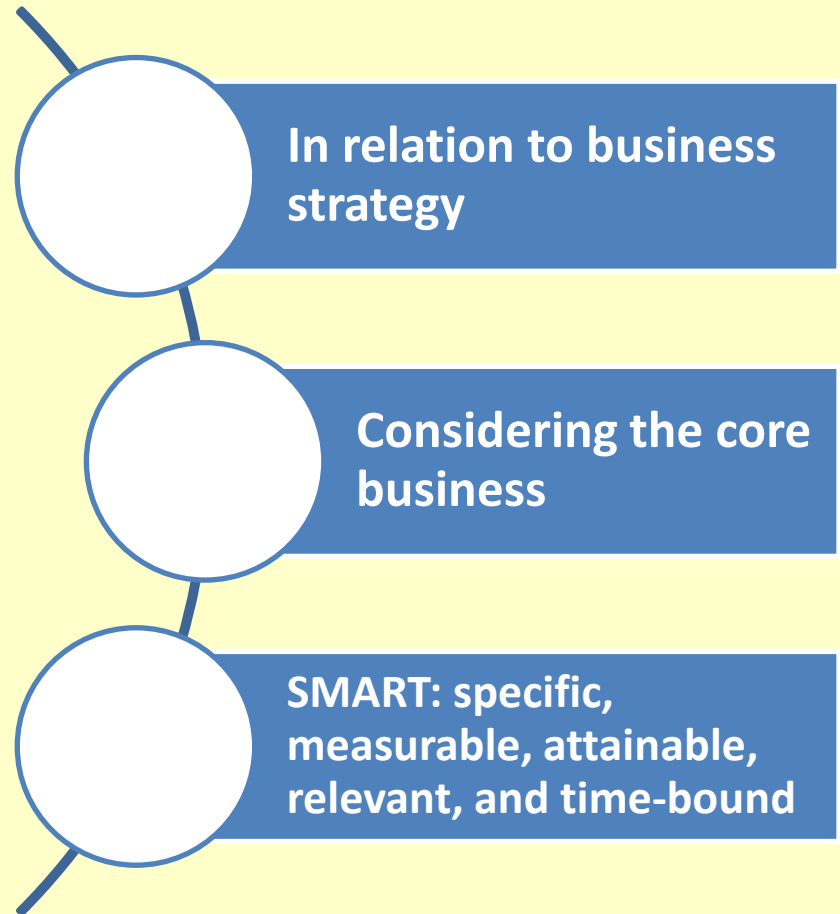
- You should also determine your key performance indicators (KPIs)

- **Example – Objective**

- Reducing the time employees spend searching for information

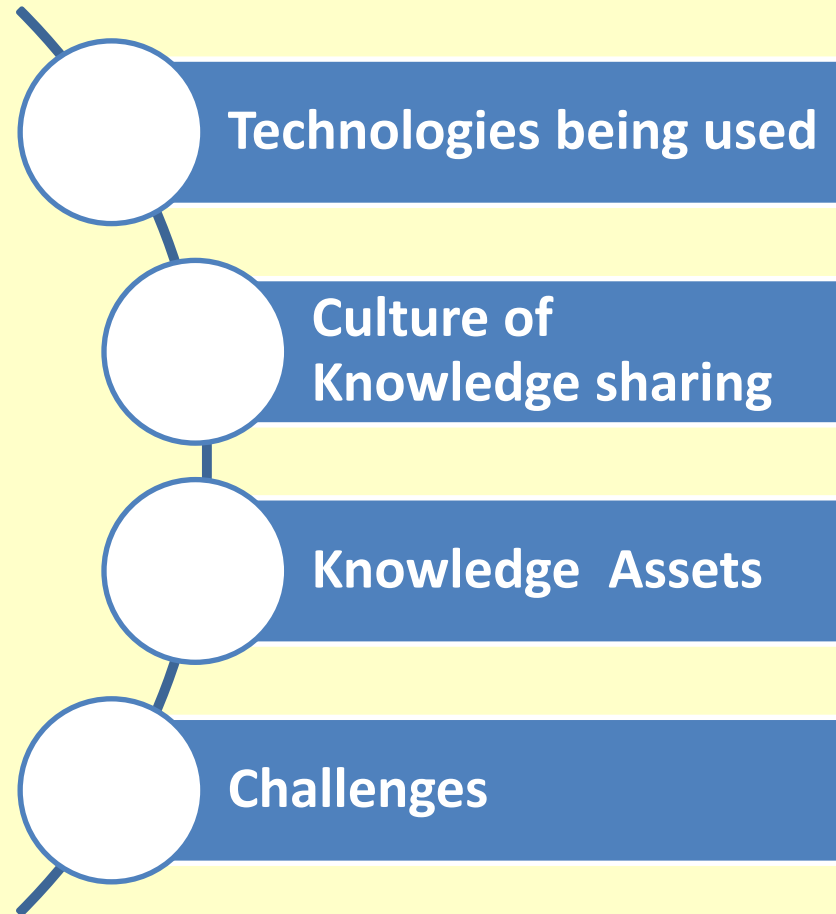
- **Example – Metrics (KPIs)**

- Average hours saved per employee per month



Cont...

- **Step -2 - Assess your current knowledge management situation**
 - You may need help from leaders or directors of every department to define Knowledge assets
 - **Knowledge Audit** is a key task here



Cont...

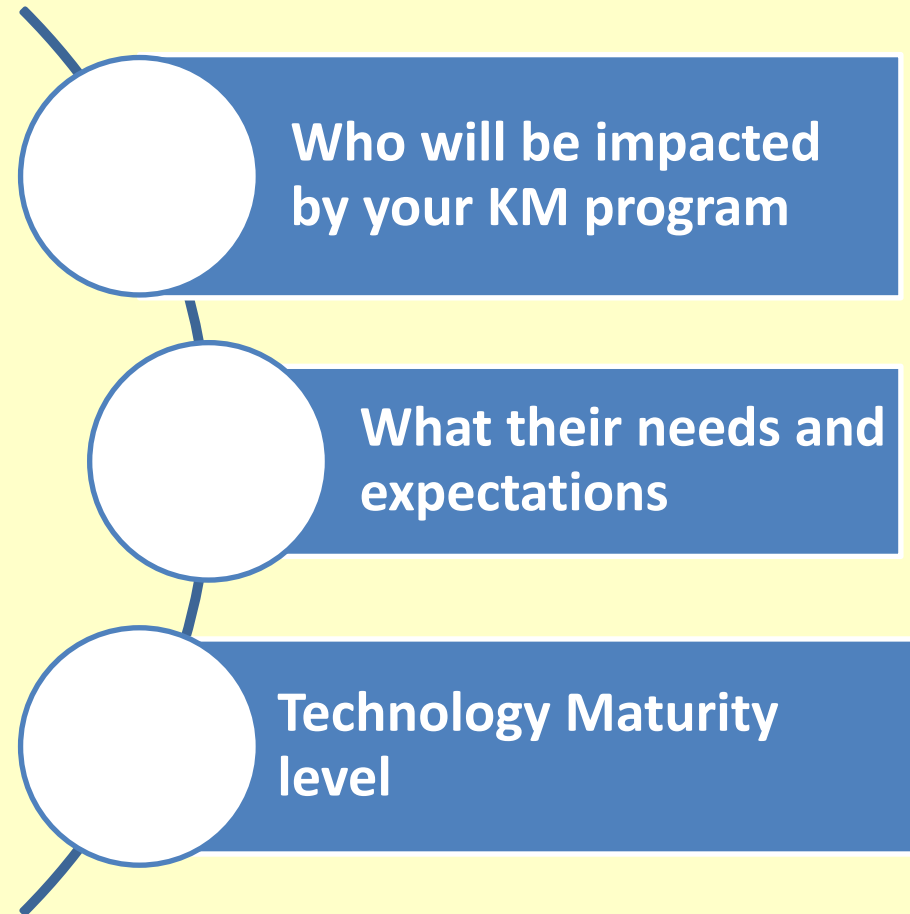
Start by documenting the challenges your organization is trying to address and how a KM strategy will help you resolve them.

- **Knowledge lives in many different repositories.** We need one central repository for company-wide knowledge.
- **Employees waste hours per week trying to track down information.** We need a searchable platform that reduces the time it takes to find information.
- **When employees leave the company or move to a new role, knowledge is lost.** We need clear processes to have employees document and share their knowledge.

Cont...

- **Step 3- Identify your target audience**

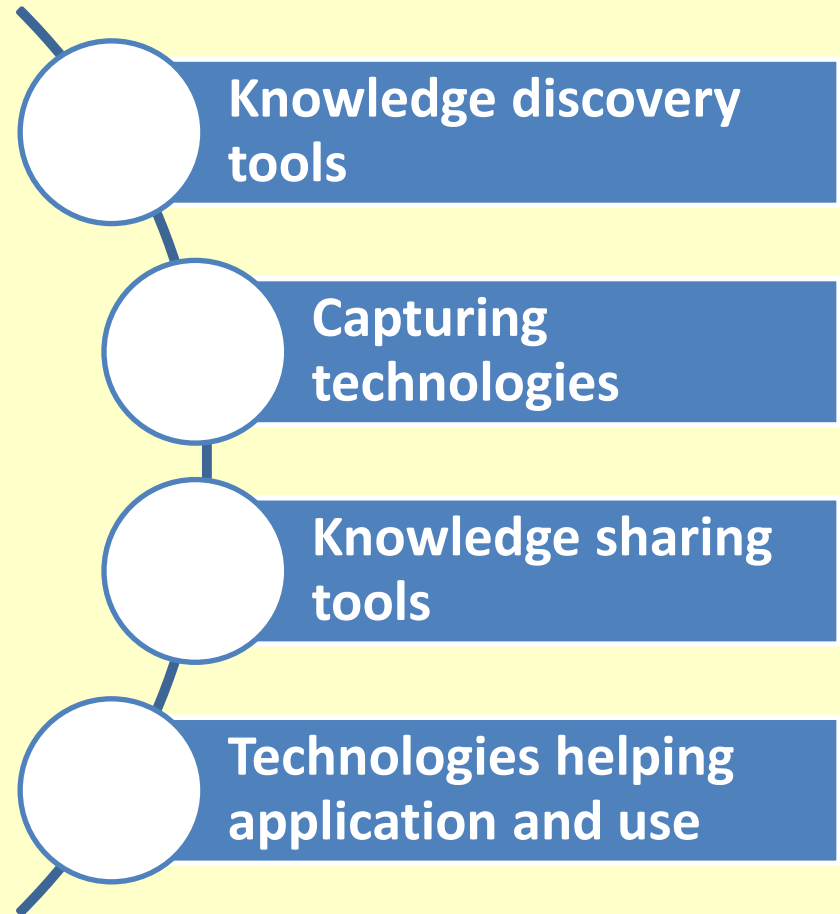
- Understanding your target audience enables you to figure out the suitable **content/KA** in your knowledge management system.



Cont...

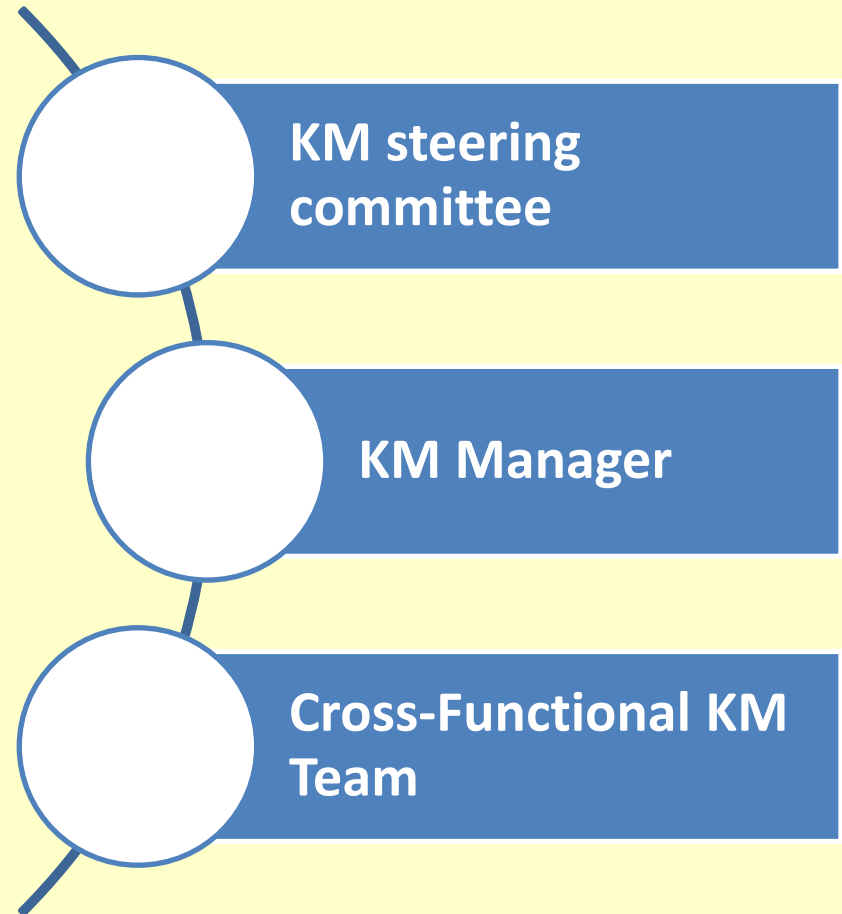
- **Step 4- Choose appropriate technology**

- Select the technology and tools that best support your KM goals and objectives and are aligned with your target audience's needs.



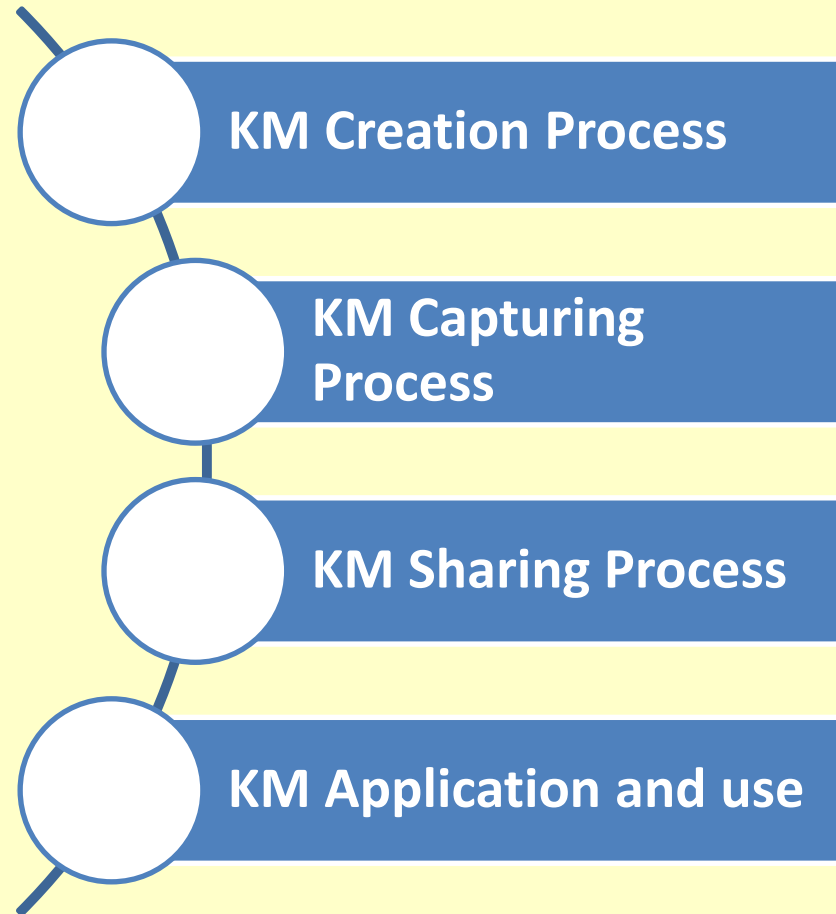
Cont...

- **Step 5 - Establish a governance structure**
 - To ensure the KM program is properly managed, monitored, and maintained.



Cont...

- **Step 6- Define KM Processes**
 - Taking the context of ESS
 - This will guide how employees will do their part in relation to building a KM culture



Cont...

- **Step 7 – Document and Review the Strategy**

- **Key elements**

- **Overview**
- **Vision and mission statements**
- **Rationale and situation analysis**
- **Strategic Objectives (7+2)**
- **Implementation Plan**





Example – SO along with action Plan

Strategic Objective (SO) - X : Establish a Knowledge Management culture at ESS

- **Objective:** To build a sustainable KM culture at ESS
- **Responsible bodies:** KM Desk, XXX directorate, ESS employees

Activities and timeline

Activities	Timeline	
	Start (year)	End (year)
• Organize KM awareness creation events		
• Develop KM platform use policy		
• Encourage employees to be engaged in KM process		

Key Performance Indicators (KPI)

Indicator	Baseline	Target	Data Source	Frequency
Number of KM awareness events created	NA	100%		Quarterly
Developed KM platform use policy	NA	100%		Once
Percentage of employees actively engaged in KM process		50%		Yearly

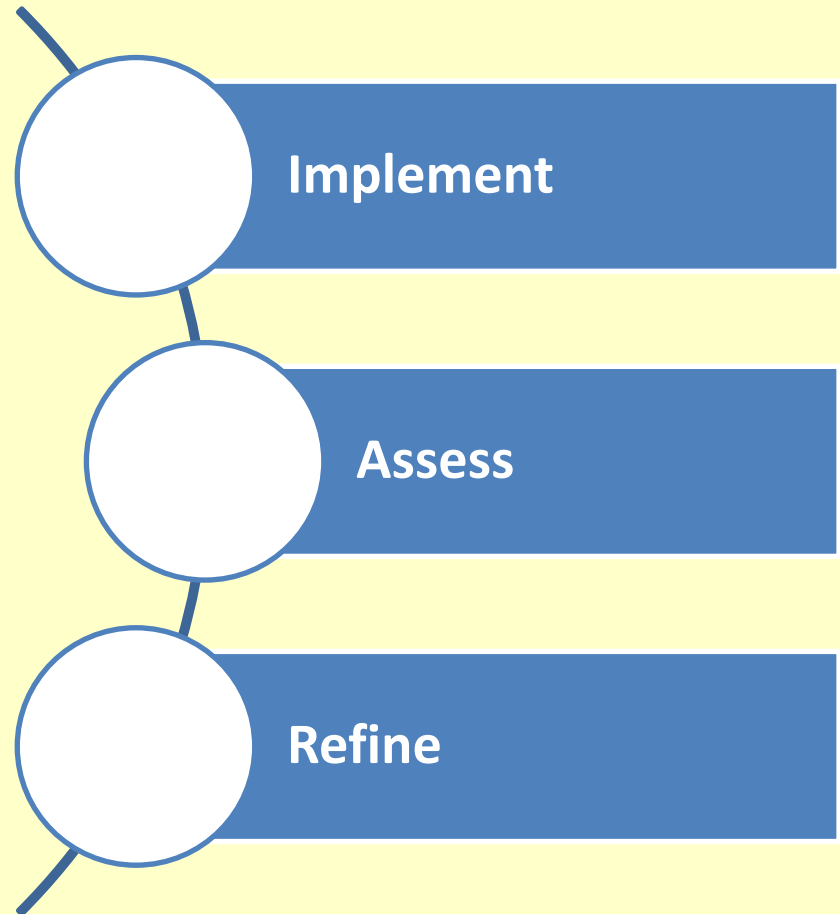
Activity

Use the above template to develop a potential strategic objective (SO) and associated action plan (activities and indicators) related to KM at ESS



Cont...

- **Step 8 -Implement and refine the strategy**
 - Launch your KM Strategy and continually refine it based on feedback and results.





Takeaway

- Recognize the role of KM strategy to establish a matured KM culture
- Start to conceptualize and contribute to the development of KM strategy
- Align the strategy with the organizational policy

Conclusion

- KM strategy/policy is a basic for any KM endeavor
- KM strategy/policy guides the way KM is implemented in an organization



Knowledge Management System (KMS) Development Module 6



Module objectives

- Describe KMS development process
- Understand Need Assessment for KMS development
- Explain the necessary components to develop KMS
- Recognize the different KMS Architecture
- Explain the necessary condition for KMS

Module Topics

- KMS development process
- Need Assessment for KMS development
- KMS components
- KMS Architecture
- Conditions for successful KMS Implementation

Brainstorming Questions

How do you develop a KMS?

KMS Development

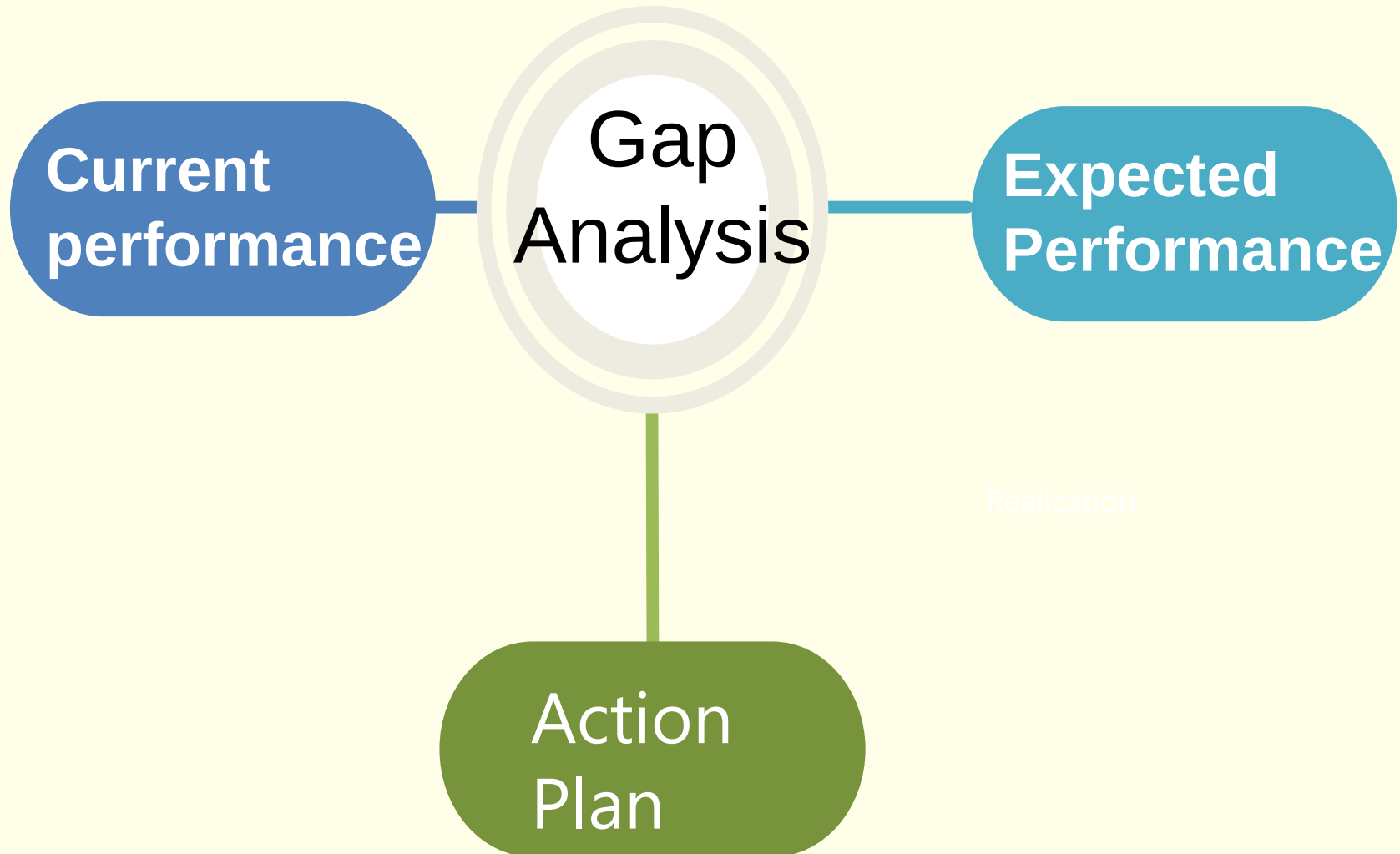
- KMS development is a sequence of tasks to create KMS
- Intended to solve existing KM problems or utilize new opportunities
- **KMS develops incrementally**
- There is no one best method to develop KMS

1. Set Clear Goals and Expectations

- Determines the overall processes of KMS development
- List all the existing KM challenges
- Undertake gap analysis
- Set goals
- Make goals SMART

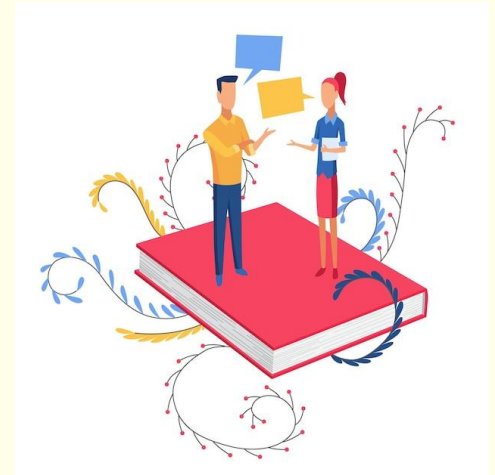


Gap Analysis



2. Form a KMS Team

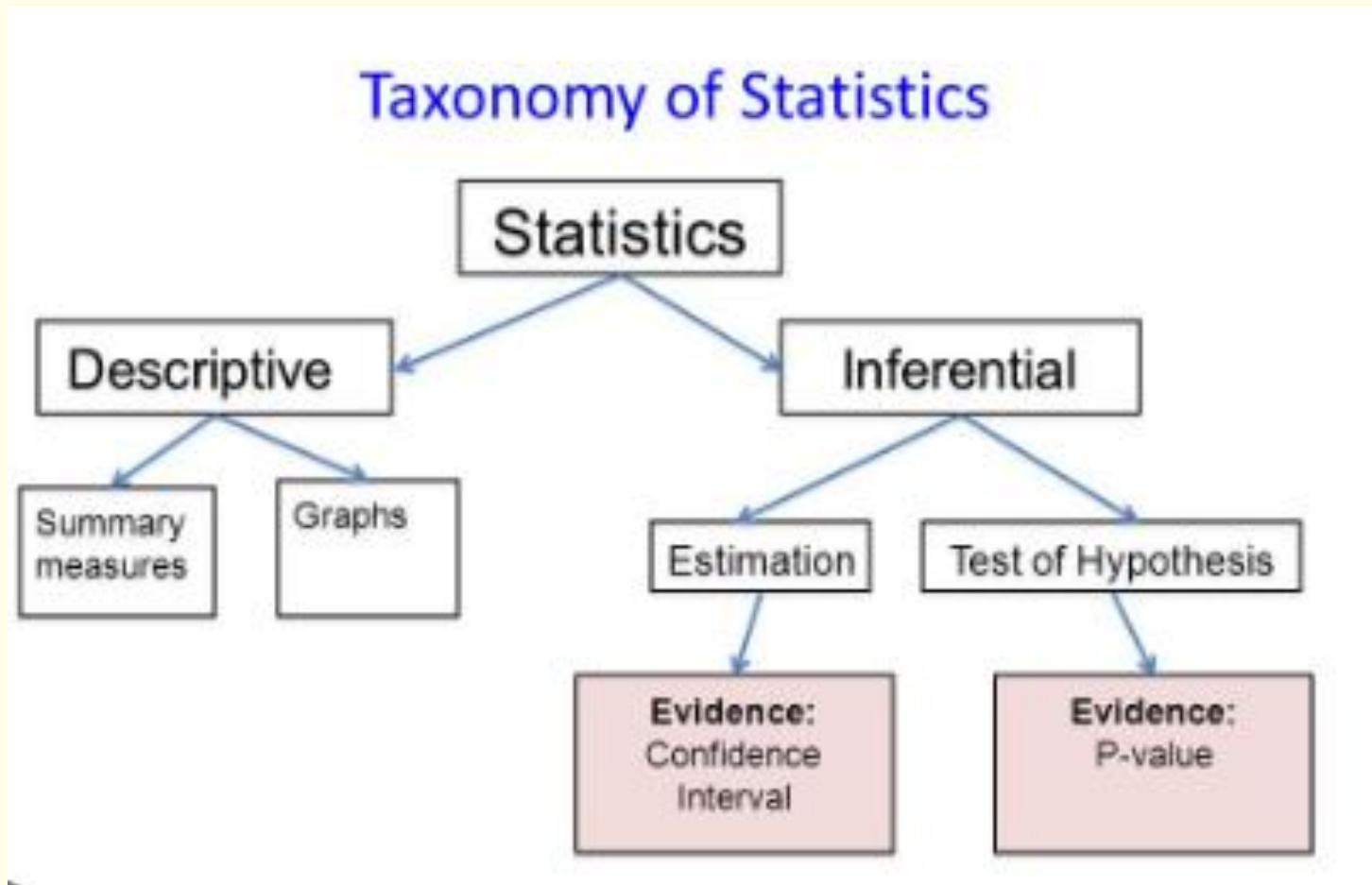
- KM team will design, build, implement, and deploy the KM system
- Identify experts both within and outside your organization
- **Balance the mixture of hard and soft skills**



3. Assess Existing Knowledge

- **Start what you already knows**
- Establish a Knowledge audit team from different departments
- Conduct a preliminary assessment of knowledge assets
- Identify Knowledge assets that are both critical and weak.
- **Former HP COE says “If HP knew what HP knows, we would be three times more productive”**

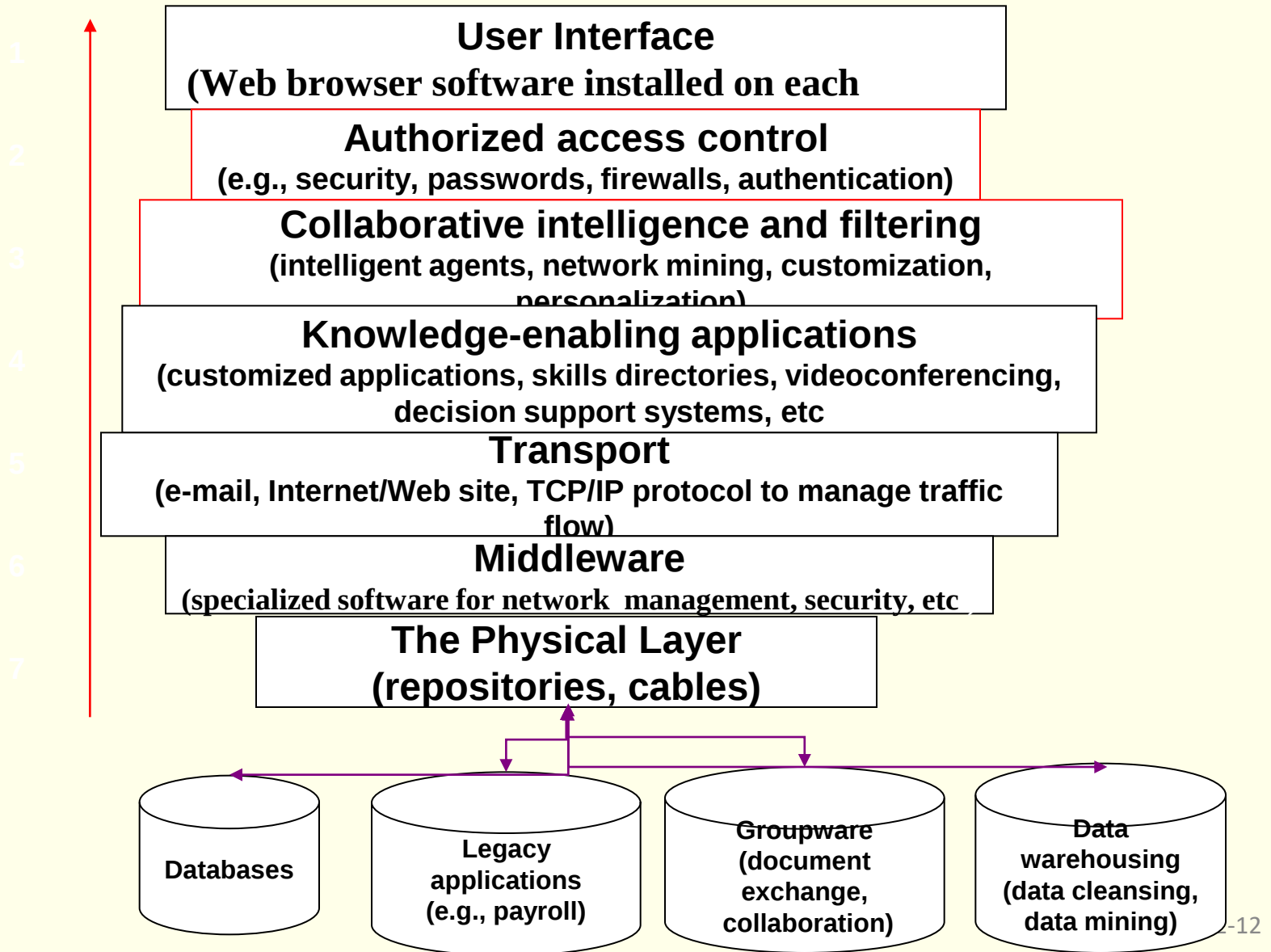
4. Capture Existing Knowledge and Organize



4. Creating the KMS Blueprint

- **KM blue print is similar to a House Plan**
- Understand standard seven layers KMS Architecture
- Determine how to optimized the standard KMS architecture for performance and scalability
- **Design future-proof KM system**

Layers of KM Architecture



5. Develop A KMS

- Putting all the components as a working system.
- Customizing the system to match your brand identity
- Add the brand logo and brand colors throughout the platform.
- **Integrate the KM platform with other information systems**

5. Develop ...

- Some functionalities of developed systems
 - Knowledge taxonomies
 - Average use of each content piece
 - Top searched queries
 - Notification bars
 - Share announcements
 - Send notifications and
 - And more

A Research Paper

Published in March 2024



THE CONTRIBUTION OF VOLUNTEERING TO CLIMATE ACTION AND COMMUNITY RESILIENCE

South-South Cooperation and
Volunteering

Volunteering

Volunteerism
and the SDGsYouth and
VolunteeringState of the
World's
VolunteerismClimate
and
VolunteeringPeacebuilding
and
Volunteering

Volunteerism

Health and
VolunteeringHumanitarian and
Volunteering

Activate Windows
Go to Settings to activate Windows.

6. Implement your KMS

- Implement your KMS using results-driven incremental (RDI) technique
- **Involves the selection and implementation of a pilot project**
- Decide KM pilot projects with the highest payoffs first
- Help you to identify and isolate failure points.

7. Manage Change and Rewards Structure

- Goal is to minimize resistance to change
 - Experts
 - Regular employees (users)
 - Troublemakers
- Resistances can be reflected through
 - aggression (or destroying system)
 - via projection (or blaming) or
 - avoidance



7. Manage Change ...

- Apply change management process
 - Top management engagement
 - Training and awareness
 - Open communication with users
 - Clear governance structure which refers to budget allocation and people with the capability to manage change

Manage change

- Reward system contingent to KMS activities
- Consider both financial and non financial reward systems
- Create a culture that promote KM
- Overcome barriers systematically

8. Keep Improving for sustainable success

- Conduct continuous training and communication
- Provide regular content reviews
- Accommodate emerging requirements with content as well as technology
- Integrate tools that automatically capture content utilization



Summary

- KMS development of new artefact that can solve existing KM problems
- Must be performed systematically with sequence of activities
- KMS is a new innovation that require proper change management
- Requires culture change that promote knowledge sharing

Case Study at ESS

- Knowledge is not shared well at ESS. One of the reason is that there is no well organized a knowledge management system. As a result vital organizational knowledge remains with senior people. Learning among joiner employees is also slow.
- If we develop a knowledge repository system, it can solve some of the above mentioned problems. Therefore, form a group and try to develop a knowledge taxonomy that is used to create a knowledge repository at ESS
- Without employees engagement, KMS cannot be successful. How do we motivate employees at ESS to engage in our KM initiative?

Takeaway

- It is necessary to design and implement KMS at ESS to systematically manage knowledge and increase ESS capability to utilize its knowledge resources

Case study Links

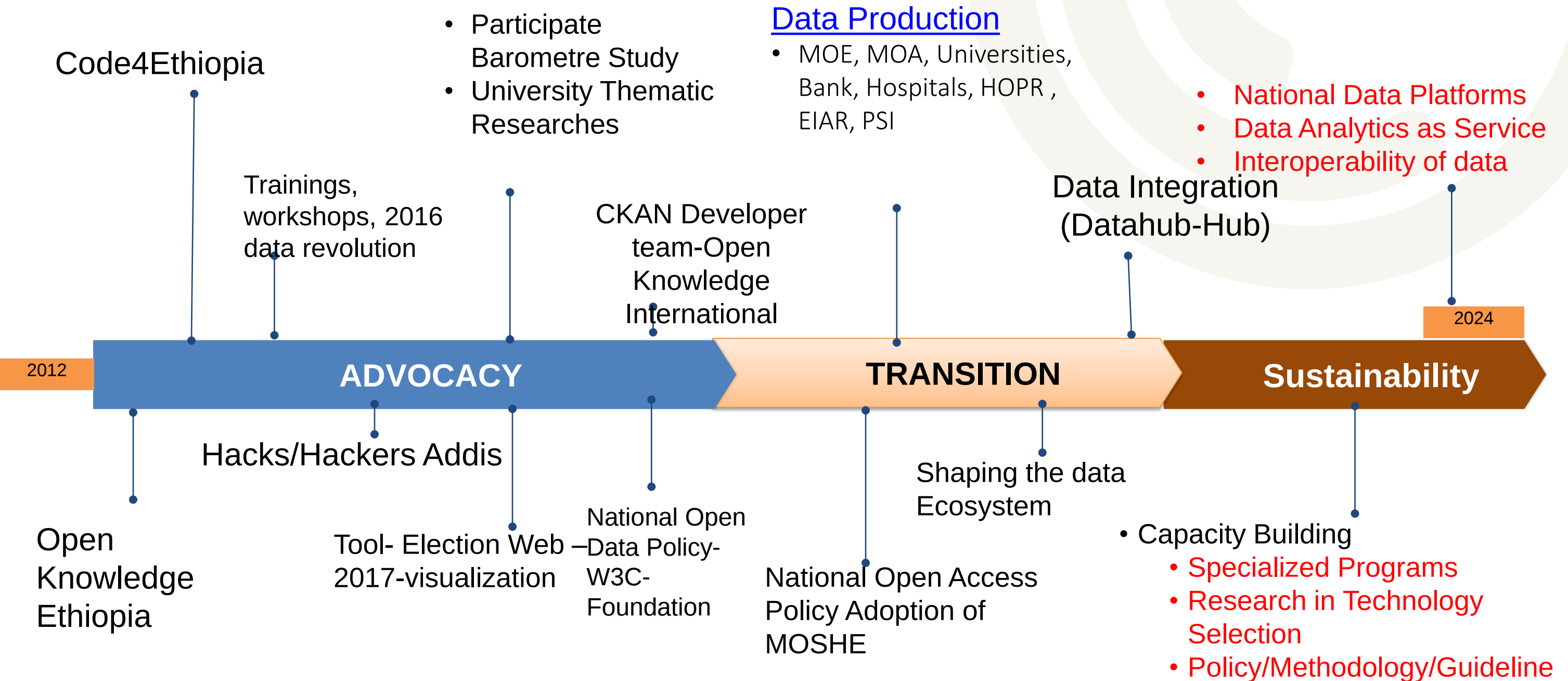
1. International Fund for Agricultural Development (IFAD) Knowledge portal -
<https://www.ifad.org/en/web/knowledge/-/knowledge-management-resource-centre>
2. World Bank open knowledge repository -
<https://openknowledge.worldbank.org/home>
3. The Climate Change Knowledge Portal -
<https://www.worldbank.org/en/olc/course/58305>

Knowledge Management in the Age of Big Data

Date: May 29, 2024



Introduction



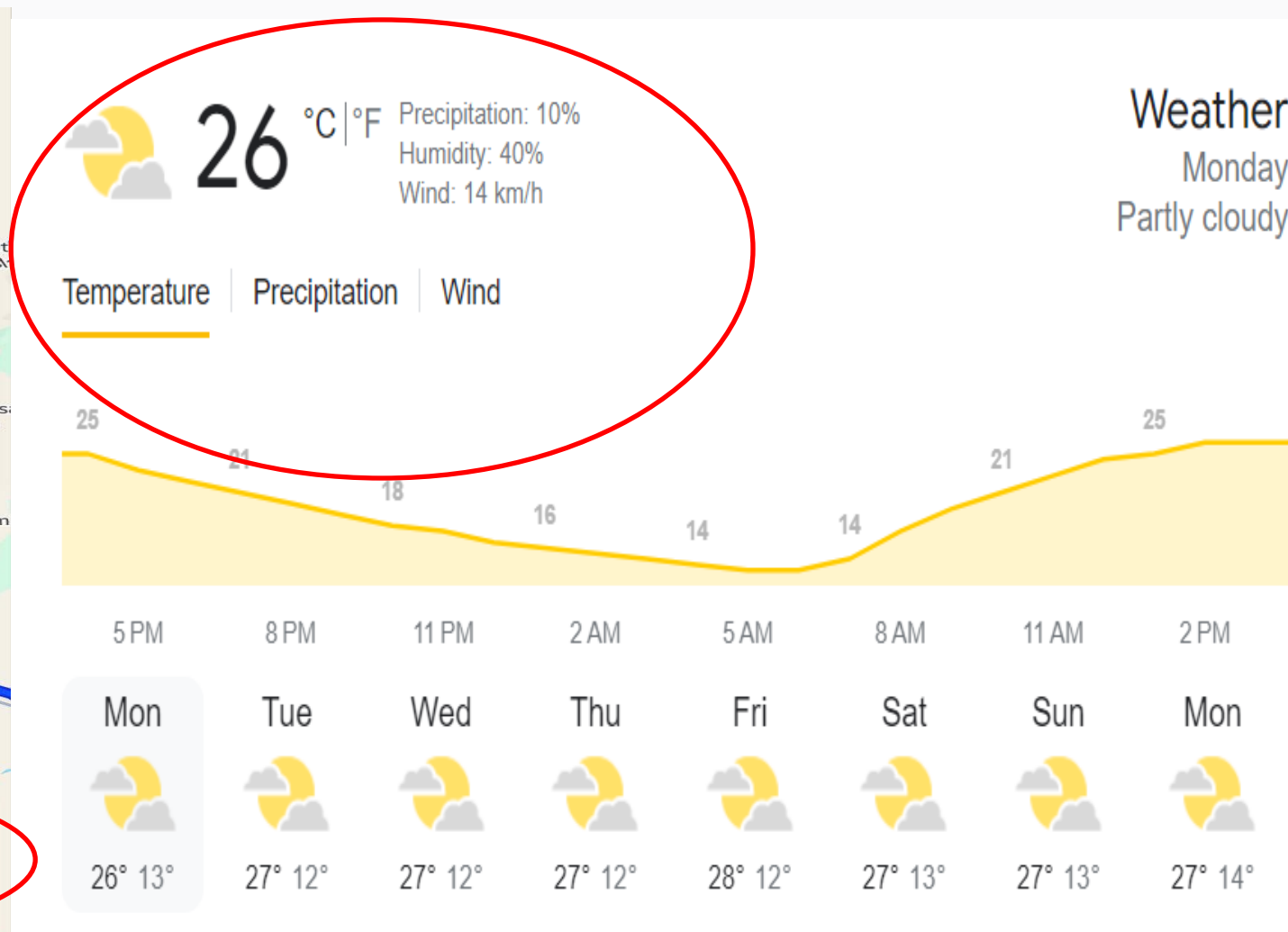
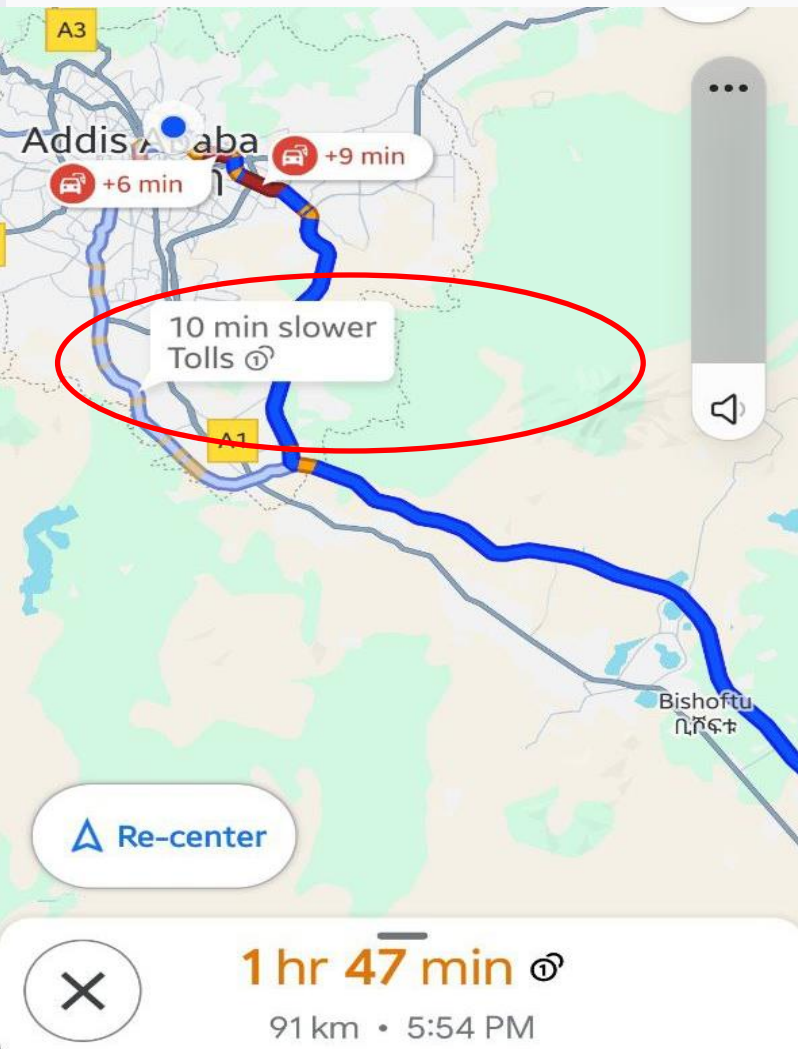
Outline

The Data Revolution and Official Statistics

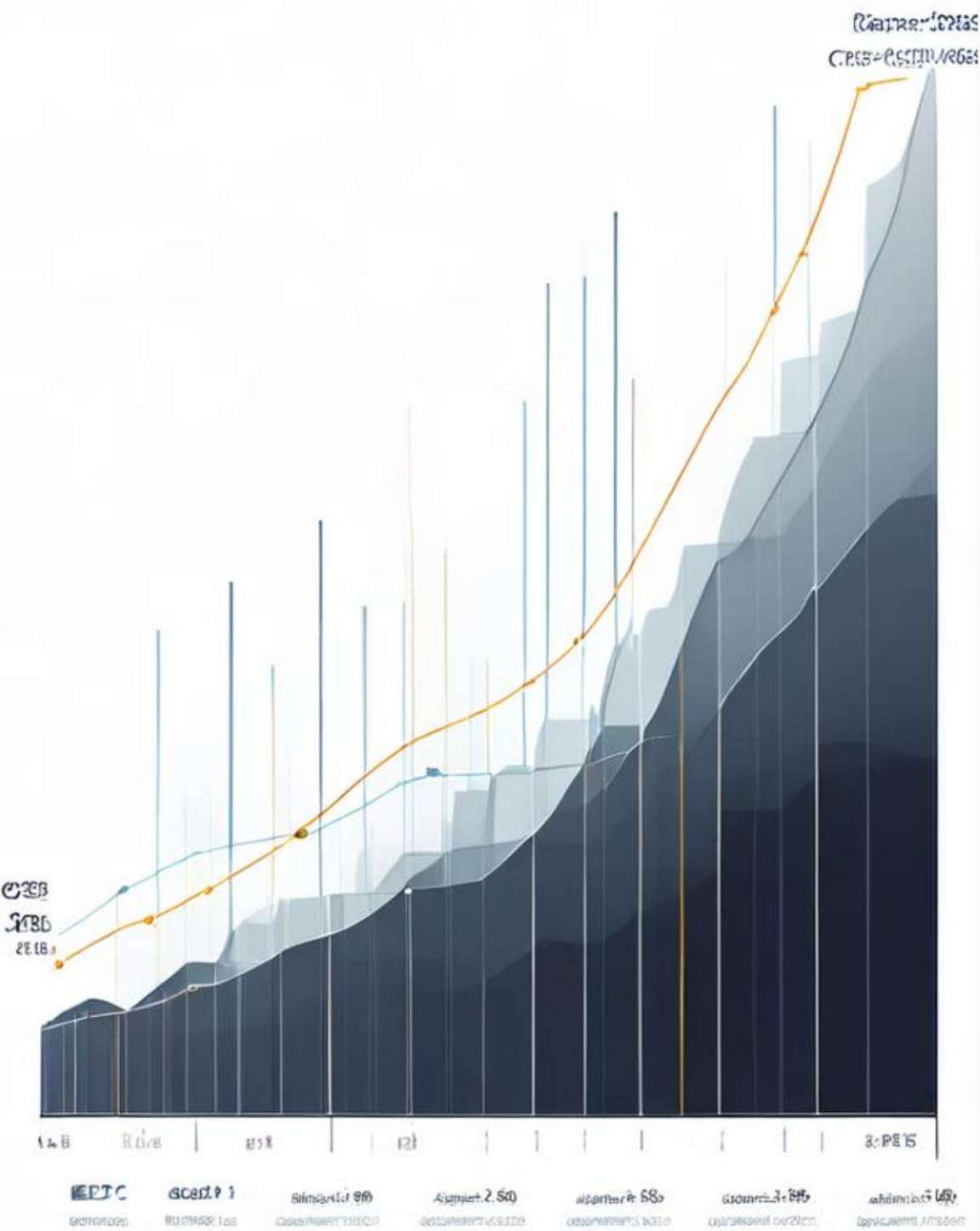
Big Data as a Knowledge Management Tool

- ESS as a Knowledge Producing Entity

Data Driven Life



We are surrounded by data, but starved for insights



Big Data - A Tsunami

The amount of data being generated is growing at an unprecedented rate.

Characteristics of Big Data

1

Volume

The sheer amount of data being generated is unprecedented, ranging from terabytes to exabytes.

2

Velocity

Data is being created and processed at an ever-increasing speed, requiring real-time analysis and decision-making.

3

Variety

Big Data encompasses structured, unstructured, and semi-structured data from diverse sources, including text, images, videos, and sensor data.

4

Veracity

Ensuring the accuracy and reliability of Big Data is crucial for making informed decisions.

Exponential Data Growth

Advancements in Data Collection

Sensor Technology

Improvements in sensor technology have enabled the collection of data from a wide range of sources, including IoT devices, satellites, and industrial equipment.

Online Interactions

The growth of online platforms and social media has led to the collection of large amounts of data on user behavior, preferences, and interactions.

Automated Processes

Automated data collection techniques, such as web scraping and API integration, allow organizations to gather data from multiple sources with greater efficiency.

Proliferation of Internet-Connected Devices

1

Internet of Things (IoT)

The increasing prevalence of IoT devices, such as smart home appliances, wearables, and industrial equipment, generates vast amounts of data that can be collected and analyzed.

2

Mobile Devices

The widespread use of smartphones, tablets, and other mobile devices has led to the collection of data on user locations, preferences, and activities.

3

Connected Vehicles

Modern vehicles are equipped with various sensors and internet connectivity, generating data on driving behavior, maintenance, and performance.

Emergence of Social Media and Online Interactions



Social Media

The widespread use of social media platforms generates vast amounts of user-generated content and data on behavior, sentiment, and interactions.



E-commerce

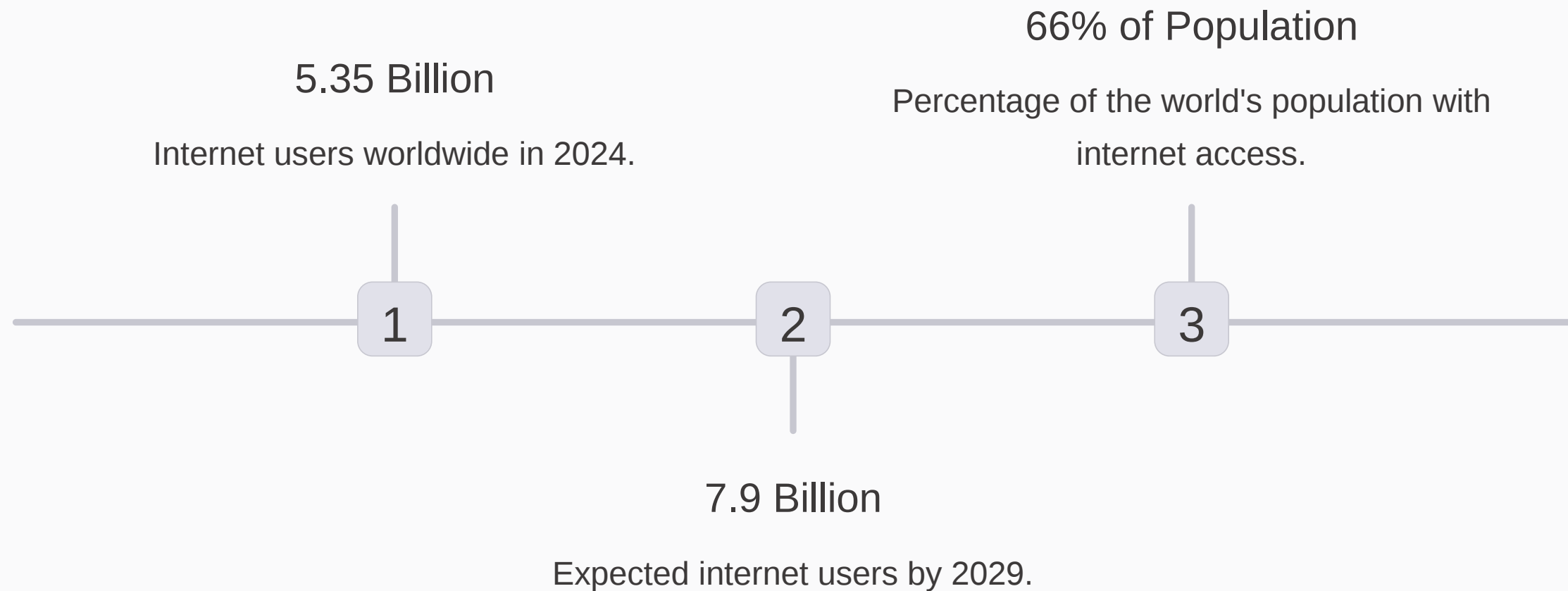
Online shopping and e-commerce platforms collect data on consumer preferences, purchasing habits, and browsing behavior.



Digital Interactions

The increase in digital communication, such as email, messaging, and video conferencing, provides additional data sources for organizations to analyze.

Worldwide Internet Users



Time Spent Online

6.5 Hours

Average daily internet usage.

16-24 Years Old

Spend an additional 2.5 hours online compared to 55-64 year olds.

75% Access

Of 15-24 year olds have internet access worldwide.

Content Creation

1

7.5 Million

Blog posts published daily.

2

5.04 Billion

Social media users as of 2024.

3

1.11 Billion

Websites exist on the internet.

4

350 Million+

Domains created since the internet began.

Mobile Internet Usage



96.5%

Access the internet
via mobile devices.



Android

Most popular mobile
operating system.



Instagram

Most popular mobile
app.



59%

Of internet traffic
comes from mobile.

Internet Usage by Device

1

Mobile

4 hours per day on average.

2

Connected TV

Over 2 hours per day on average.

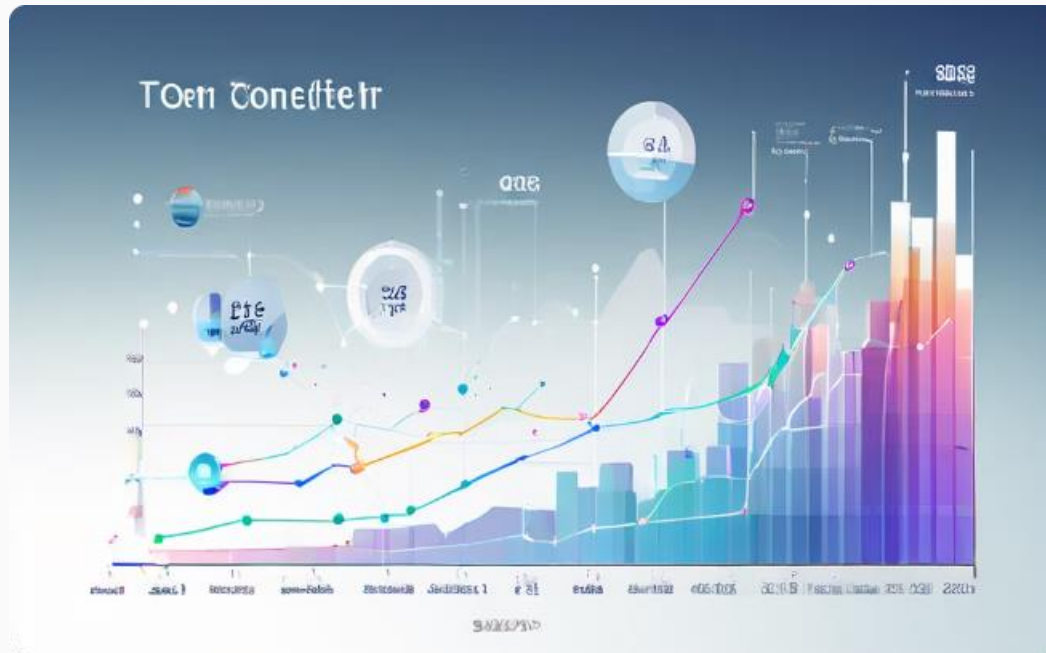
3

Desktop

Over 1 hour per day on average.



Growth of IoT Connected Devices Worldwide



Exponential Growth

The number of IoT connected devices worldwide is expected to grow exponentially, with projections of over 30 billion devices by 2025.



Global Adoption

IoT adoption is occurring across developed and developing regions, with smart cities, industrial automation, and consumer electronics leading the charge.



Invention of the Web

1 The Great Mind

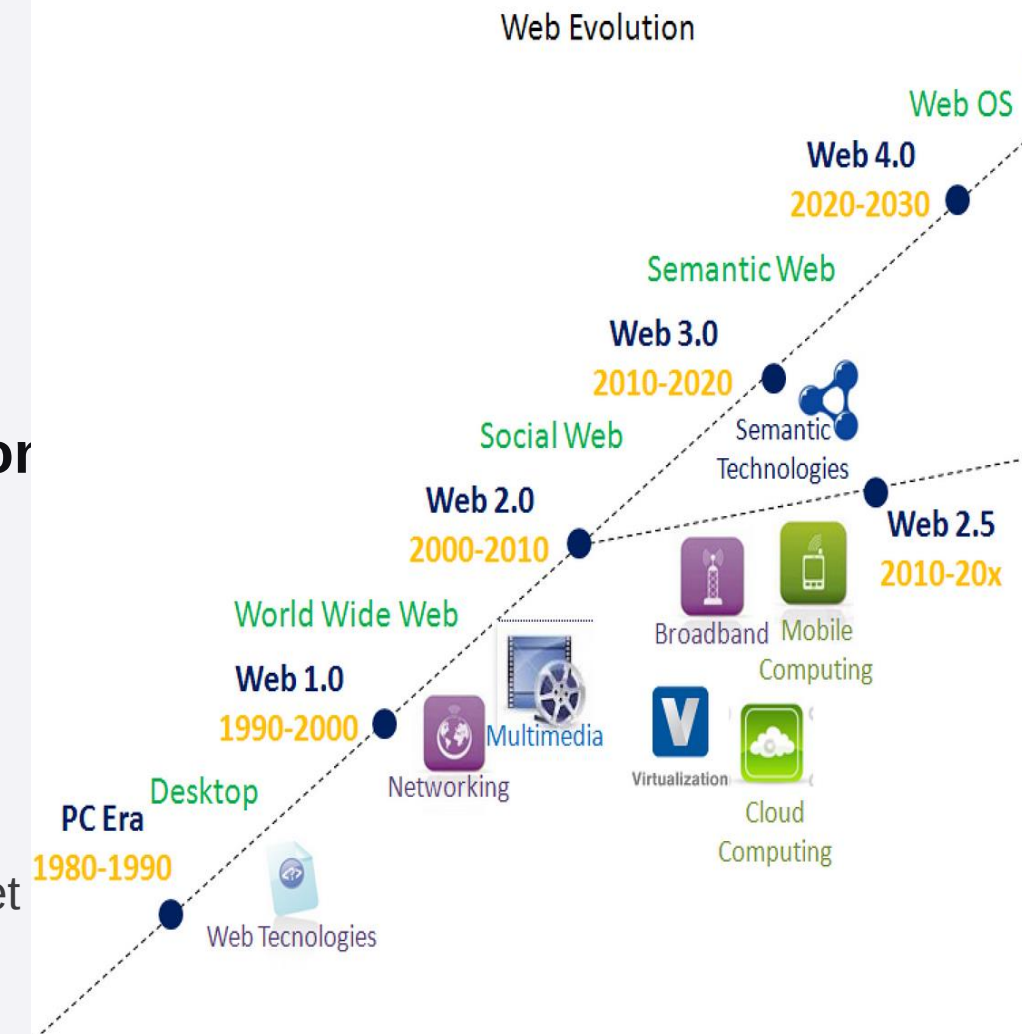
Tim Berners-Lee, the inventor of the World Wide Web, is widely revered for his groundbreaking work and vision for an open and accessible internet.

2 Open Web

Berners-Lee's decision to make the web open and free for all has had a profound impact on the way we access and share information globally.

3 Evolving Vision

While the web has grown exponentially, Berners-Lee believes that his original vision for the Semantic Web has not yet been fully realized.



Sophisticated Consumers

Active Engagement

Internet users today are highly engaged, proactively interacting with web content in a variety of media, including text, sound, photos, and video.

Personalization

The internet has become highly personalized, with search engines, social networks, and online directories tailoring content and advertisements to individual users based on their behavior and preferences.

Tracking Behavior

Internet cookies are increasingly used to track user behavior and further refine the personalized experience, allowing businesses to better understand and cater to their customers.

Data as **Asset-Like, View and Share**

Monetizing Data

Data has become a valuable asset, with customer experiences and user activities being anonymized, packaged, and sold to various industries, such as internet advertising.

Personalized Insights

The wealth of data collected on individuals allows companies to gain unprecedented insights, often knowing more about a person than they know about themselves.

4

1

2

3

Capturing User Behavior

Companies like eBay and Google are capturing vast amounts of user data, including every click, like, post, tweet, and query, which can be leveraged for commercial purposes.

- How many people are born
- At what age they die
- how many children still live in poverty;
- How many children need educating
- How many doctors to train or schools to build
- How public money is being spent
- how many people are in what kinds of work, what companies are trading and whether economic activity is expanding

Adoption of IoT Continues to Rise

IoT might have gotten off to a slow start, but it is now representing one of the reasons that the big data size is growing at an unprecedented rate.

Big Data Solutions Are Becoming More Accessible

Storage solution and analytic platform costs are decreasing, so smaller organizations can access insights from tools like CRM platforms and marketing automation.

Cloud Computing Solutions Are Moving to the Forefront

As companies continue to embrace the cloud, data centers have replaced the traditional enterprise IT infrastructure, contributing to data analytics growth rate.

AI & Automation Are Becoming More Prevalent

AI allows users to make sense of unstructured data sources and discover patterns and actions that create business value.

Infrastructure as a Service (IaaS) is Growing

The bundling of analytics capabilities into IaaS stands to democratize analytics, potentially eliminating security, and installation risks..

Importance of Big Data for Business Growth

Improved Decision Making

Big data analytics enables more informed and data-driven decision-making, leading to better business outcomes.

Competitive Advantage

Organizations that effectively leverage big data can gain a competitive edge by identifying new opportunities and optimizing operations.

Big data is at the foundation of all the megatrends that are happening

AI Revolution

- Groundwork for AI: Before 1950
- Birth of AI: 1950-1956
- AI maturation: 1957-1979
- Real Impact of AI is being observed after 2000

1 in 2

business leaders don't have access to data they need

83%

of CIO's cited BI and analytics as part of their visionary plan

5.4X

more likely that top performers use business analytics

- Big Data is Luxury for Countries Like Ethiopia
 - Optional to adopt this trend
 - Impossible to adopt in developing countries context

Big Data in Official Statistics

- Relation Between the two phrases
 - Similar
 - Contrary to each other
 - Support each other

(EST): THURSDAY, 25 FEB, 21:00-22:00

(MT +7): FRIDAY, 26 FEB, 09:00-10:00

**OLUTION: THE POWER OF OPEN
AT MATTER TO THEM**

ABOUT SESSION

Open Data provides good
and the balance between
for many countries, this
ss and therefore limiting
makers with data and

lands, New Zealand and
successfully struck. The
frameworks for striking a
vision for a National

SPEAKERS

Director,

Co

Direc

Challenges Facing National Statistical Offices

1 Expensive Data Production Process

- Adapting to new data sources, tools, and methods to maintain relevance and efficiency

2 Data Demand Expectation

- Volume, Quality, Variety, Scope, Granularity, Speed
- Machine/Human Readable

3 No Data Monopoly

Public sectors also produce data

4 Competition from Private data merchants

How to compete with mega web companies .

Data Revolution

Data Revolution: May 30, 2013

- **UN Committee of Experts on Big Data and Data Science for Official Statistics Mandate**
- Strategic vision, direction and coordination
- Public Trust for Big Data in Official statistics
- Practical use of big data sources, including cross-border
 - Methodological issues
 - Legal issues
 - Privacy issues
 - Security, information technology issues
- Capacity-building
 - Training
 - Experience Sharing
 - Advocacy of the use of big data for policy



TOPICS ▾

DATA ▾

METHODOLOGY ▾

EVENTS ▾

Statistical Commission Decisions

[List all Decisions](#)

Data needs improving. Despite considerable progress in recent years, whole groups of people are not being counted and important aspects of people's lives and environmental conditions are still not measured. For people, this can lead to the denial of basic rights, and for the planet, to continued environmental degradation. Too often, existing data remain unused because they are released too late or not at all, not well-documented and harmonized, or not available at the level of detail needed for decision-making.

Big data and modernization of statistical systems

sion / Year: 45th Session (2014)

ision code: 45/110, **chapter:** I, **section:** B, **page:** 20

ssification: [Methodology of data collection, processing, dissemination and analysis](#)

ic: [Big Data](#)

Statistical Commission:

Expressed appreciation for the report of the Secretary-General on big data and the modernization of statistical systems;

Reiterated that big data constitute a source of information that cannot be ignored and that the global statistical community must organize itself and take urgent action to exploit the possibilities and harness the challenges effectively;

(c) Recognized the need to further investigate and share experiences on possible data sources, challenges and areas of use of big data for official statistics at the global level;

(d) Supported broadly the proposal to create a global working group on the use of big data for official statistics, which will manage the globally relevant issues, and requested that:

Improved Data Collection

1

Real-Time Monitoring

Big data sources, such as web scraping, sensor networks, and social media, can provide NSOs with real-time data, enabling them to monitor economic and social trends more effectively.

2

Automated Data Acquisition

Leveraging APIs and other big data techniques, NSOs can automate the collection of data from various sources, reducing the burden on respondents and improving timeliness.

3

Predictive Capabilities

By analyzing big data patterns, NSOs can develop predictive models to anticipate changes and better plan for future data collection needs.

Qualitative Data Collection Methods



Qualitative Surveys



Case Studies

Collaboration

Access to New Data Sources

NSOs can partner with private companies to gain access to a wider range of data sources, such as customer transactions, web traffic, and location data.

Shared Expertise

Collaborating with private sector data providers can enable NSOs to leverage their expertise in big data management, analytics, and visualization.

Innovative Approaches

Private sector partnerships can inspire NSOs to adopt more innovative approaches to data collection, analysis, and dissemination.

Cost Savings

Leveraging private sector data and resources can help NSOs reduce the costs associated with traditional data collection methods.

Data Sources

Satellite and Mobile

- Using satellite data to track economic activity, crop yields, and infrastructure development, land cover, crop statistics
- Mobile for disaster and displacement information society statistics, migration statistics, tourism statistics and transportation and commuting statistics.

Web Scraping

Extracting relevant data from websites to complement traditional surveys.

Administrative Records

Leveraging government and private sector administrative data to provide more timely and granular insights.

Tracking data, data from other systems to price index

Social Media

Analyzing social media data to understand public sentiment and behaviors in real-time.

Improved Data Visualization and Dissemination



Dynamic Dashboards

Interactive data visualizations can enable users to explore and manipulate statistical information in real-time, enhancing engagement and understanding.



Data Storytelling

NSOs can leverage big data to create compelling narratives that communicate statistical insights more effectively to policymakers and the public.



Improved Accessibility

By adopting user-friendly data dissemination platforms, NSOs can make statistical information more accessible and understandable to a wider range of stakeholders.

Improved Data Quality and Enrichment

1

Data Validation

Big data techniques can help NSOs validate and cross-check data from multiple sources, improving the overall quality and reliability of their statistics.

2

Data Enrichment

NSOs can combine traditional survey data with big data sources to provide richer, more comprehensive insights that better reflect the complexities of the real world.

3

Targeted Sampling

Big data can enable more targeted and efficient sampling strategies, reducing the burden on respondents while maintaining statistical accuracy.



Challenges

Data Quality

Big data sources may lack the rigorous quality control processes of traditional statistical data, presenting accuracy and reliability concerns.

Privacy and Security

The use of big data raises complex privacy and data protection issues that must be carefully addressed.

Rest, Processing,
Transportation

Skill Gaps

Analyzing and extracting insights from big data requires specialized skills that many NSOs currently lack.



Challenges

1

Ethical Use of Data

NSOs must ensure big data is used in an ethical manner that respects individual privacy and aligns with societal values.

2

Data Governance

Robust data governance frameworks are needed to manage the increased risks and complexities of big data.

3

Cybersecurity Threats

The larger attack surface of big data systems heightens the risk of data breaches and cyber attacks.



Challenges

1

Infrastructure

Big data requires advanced computing infrastructure, such as high-performance servers, storage, and networking, which can be costly to acquire and maintain.

2

Software Tools

NSOs may lack the necessary software tools and platforms to effectively manage, process, and analyze large, complex datasets.

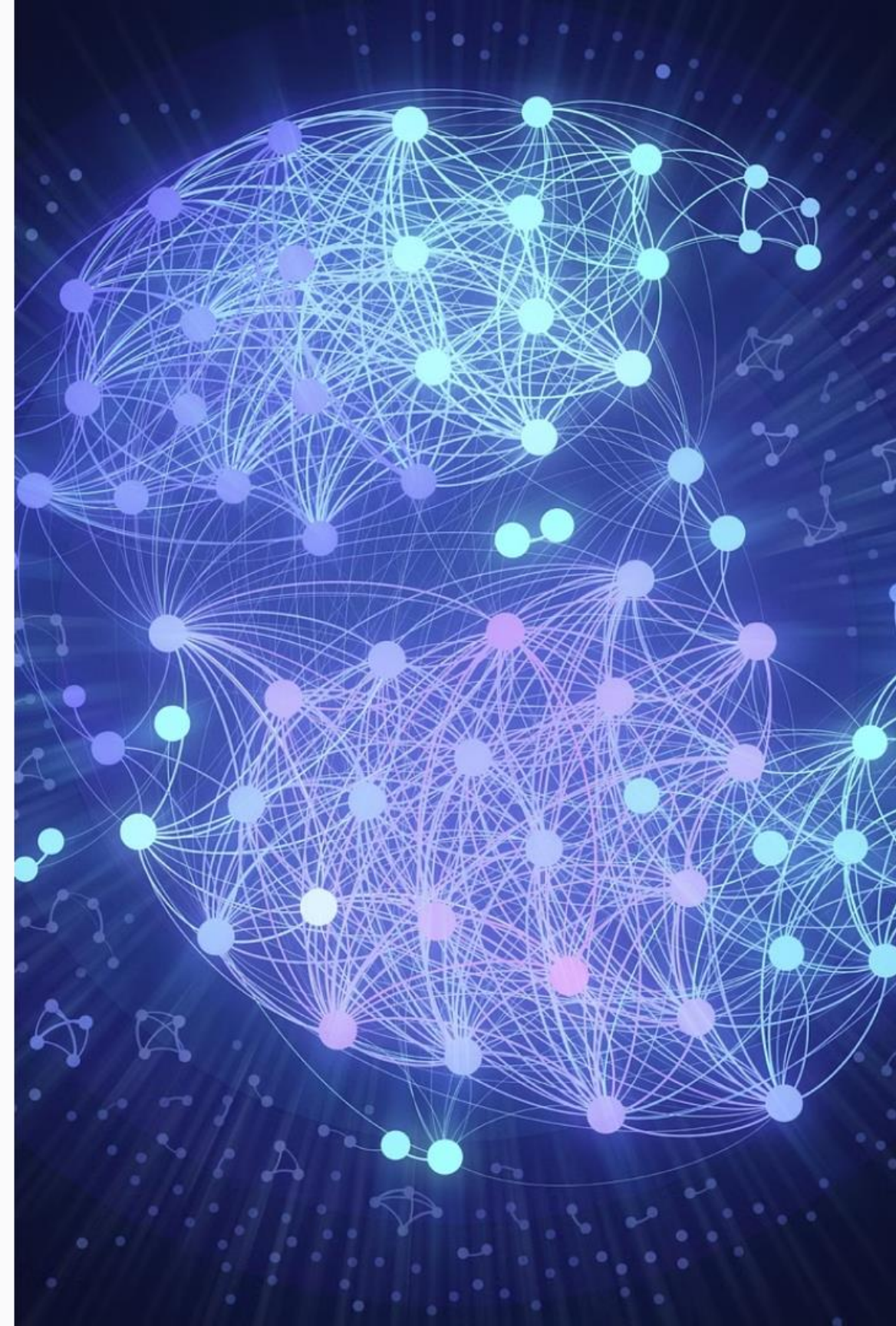
3

Integration

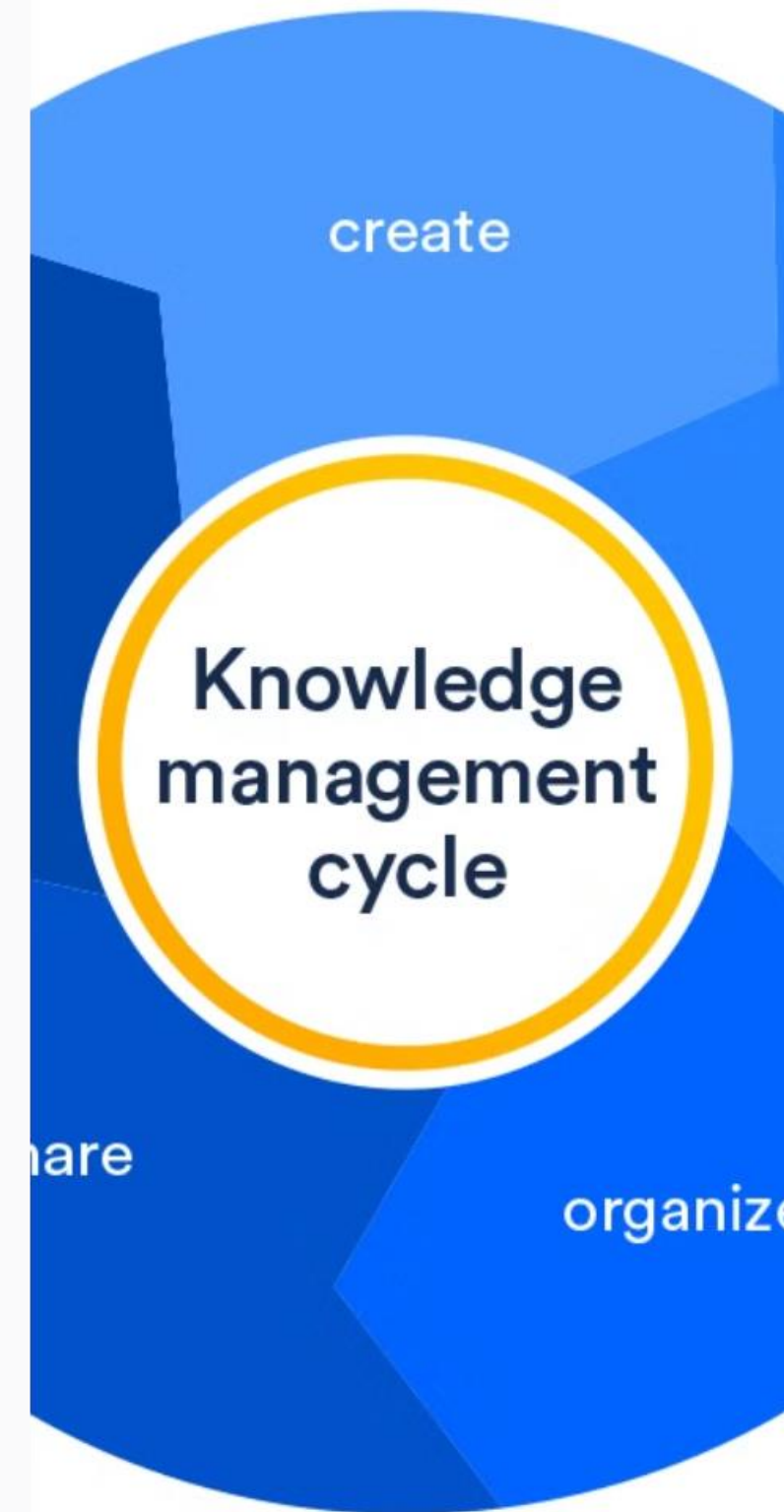
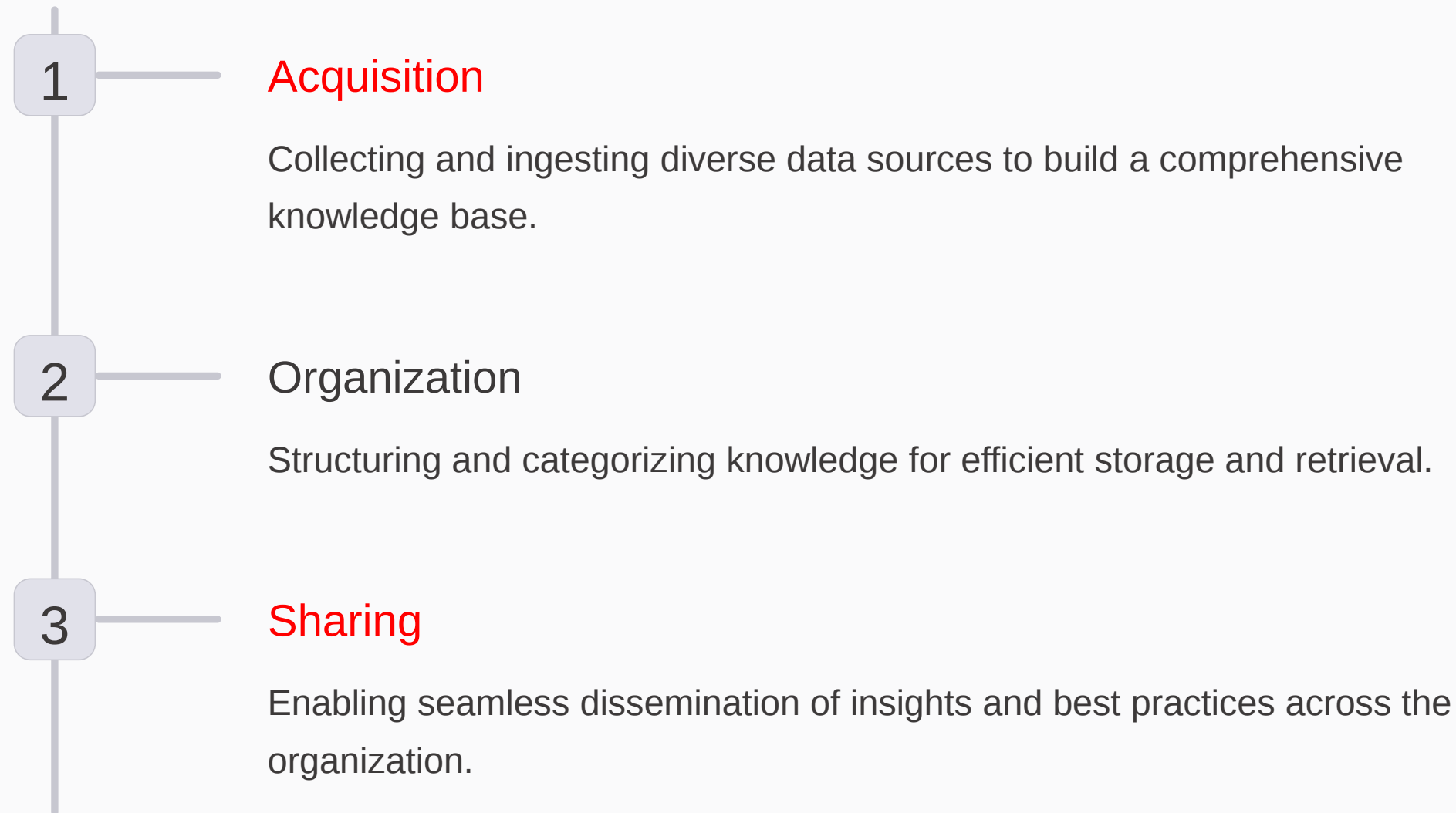
Integrating big data sources with traditional data sources and statistical systems can be technically challenging and time-consuming.

Big Data Technologies in Knowledge Management Life Cycle

Big data technologies are transforming the way organizations capture, process, and leverage knowledge. This presentation will explore how these innovative tools can enhance the knowledge management life cycle, from acquisition to application.



Knowledge Management Life Cycle



Role of Big Data in Knowledge Acquisition

Diverse Data Sources

Big data technologies can integrate structured, unstructured, and real-time data from a variety of internal and external sources.

Scalable Storage

Powerful big data platforms provide the capacity to store and manage exponentially growing volumes of knowledge.

Rapid Ingestion

Advanced data processing engines can ingest and analyze data at high speeds, enabling timely knowledge acquisition.

Role of Big Data in Knowledge Acquisition

1

Data Aggregation

Collecting and integrating data from various sources to create a comprehensive knowledge base.

2

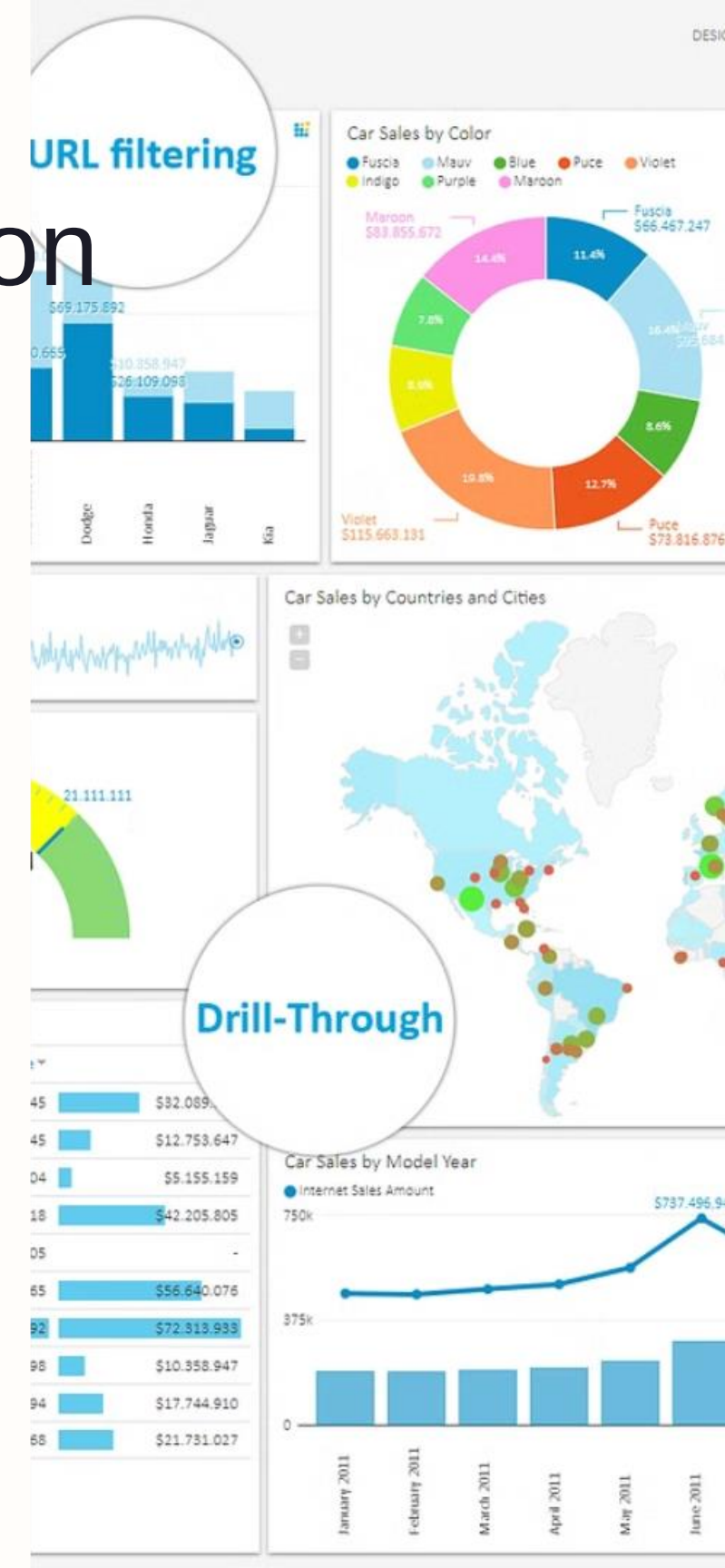
Advanced Analytics

Applying machine learning, predictive modeling, and natural language processing to uncover hidden patterns and insights.

3

Actionable Insights

Translating the analytical findings into practical recommendations and decision support for knowledge-driven actions.



Integrating Big Data with Traditional Statistical Methods

1

Data Integration

Combine big data sources with traditional statistical data to enhance the breadth, depth, and reliability of official statistics.

2

Robust Methodology

Develop rigorous analytical frameworks to ensure the quality, validity, and trustworthiness of big data-driven insights.

3

Synergistic Approach

Leverage the strengths of both traditional and big data methods to produce more comprehensive and reliable official statistics.

Big Data for Knowledge Organization

Hadoop

Big data technologies in the value chain

AI Knowledge base system

Represent knowledge

HDFS

Store data .



Leveraging Big Data for Knowledge Sharing



Collaboration

Big data tools can facilitate real-time, cross-functional collaboration, enabling the seamless exchange of knowledge.



Personalization

Intelligent algorithms can curate and deliver personalized knowledge assets based on individual user needs and preferences.



Social Engagement

Big data-powered social platforms can encourage the active sharing and discussion of organizational knowledge.

Personalized Knowledge Delivery

1

User Profiling

Leveraging data on user preferences, behavior, and context to deliver personalized knowledge and recommendations.

2

Intelligent Filtering

Using advanced algorithms to sift through the vast knowledge base and provide the most relevant information to each user.

3

Seamless Access

Ensuring that knowledge is accessible and presented in the most convenient and user-friendly formats across devices and platforms.



tom Sea

Discussion in Groups

- Identify new big data sources/Use case in the Ethiopian Context
 - Methodological Revisions Required
 - What kind of datacenter/data management Technologies
 - What legal framework we need
 - ESS maturity

Adoption of Big Data in ESS

Steps to be followed

- Data use Policy for new data sources (Nation Wide)
- Data Standards
- Methodology Revision (Mobile data, Satellite Data, Scanner Data)
- Guidelines and Manuals in data quality and privacy
- Contextualizing Big Data in Ethiopia: Research
- Big Data Infrastructure (computing infrastructure)
- **Data Management Systems (including Data Integration)**
- Data Analytics as service
- Capacity Building



Big Data Technologies



Data Infrastructure

Establish a robust data infrastructure to support the collection, storage, and processing of big data.

Data as a Service



Analytics Platform

Implement a comprehensive BI and analytics platform to analyze data and derive insights.

Analytics as a Service



Data-driven Culture

Cultivate a data-driven culture where employees are empowered to make decisions based on data.

Distributed Computing Principles

Parallelism

Breaking down large tasks into smaller, independent subtasks that can be executed concurrently on multiple machines.

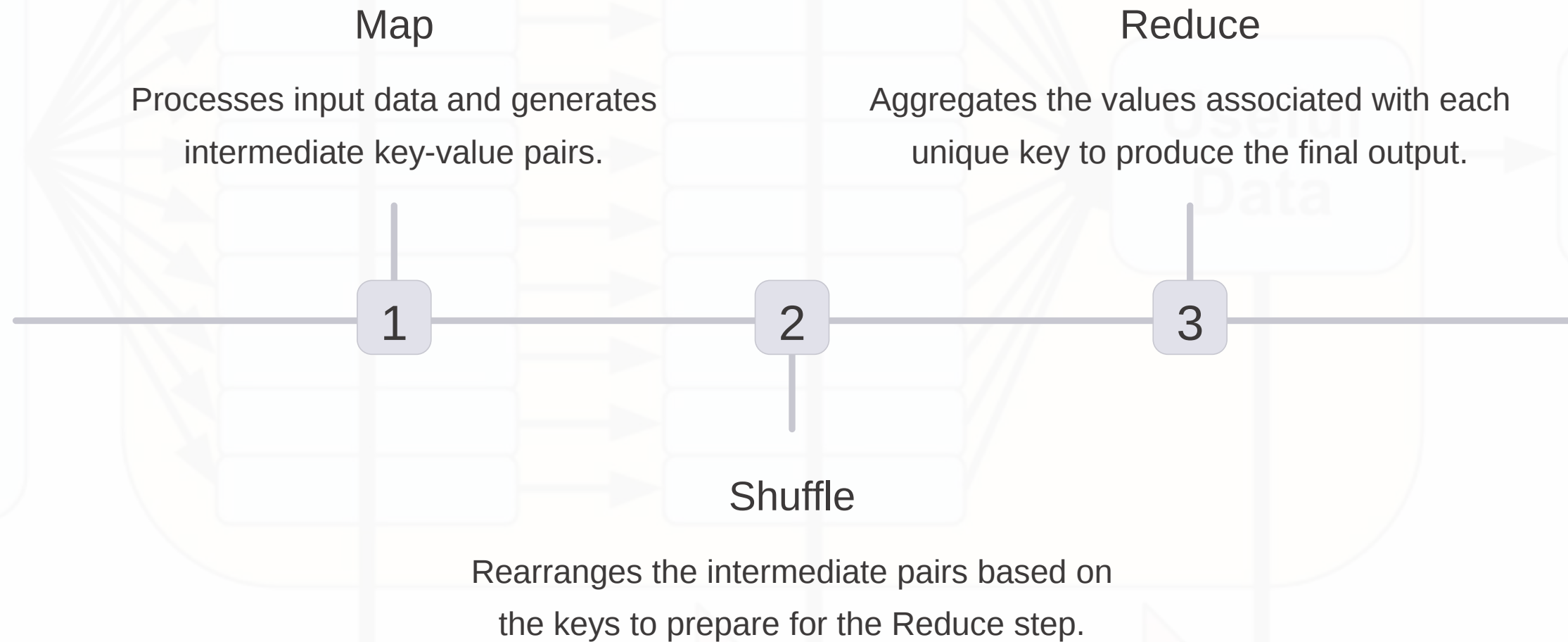
Fault Tolerance

The ability to recover from hardware or software failures by automatically redistributing work to other nodes.

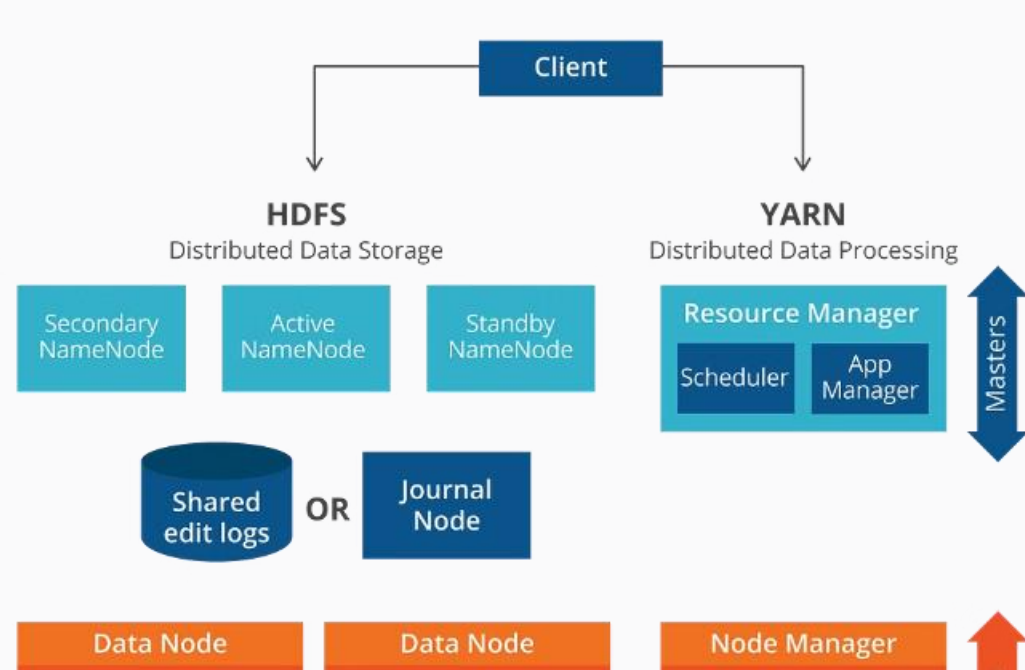
Scalability

The capacity to handle growing amounts of data and users by adding more computing resources as needed.

Hadoop and the MapReduce Framework



Distributed Storage with HDFS and Object Stores



HDFS

Hadoop Distributed File System (HDFS) is a scalable and fault-tolerant storage system designed to handle large datasets.



Object Stores

Cloud-based object stores, such as Amazon S3, provide scalable and cost-effective storage for unstructured data.

Scalable Data Processing with Distributed Frameworks



Apache Spark

A fast and general-purpose distributed computing framework for large-scale data processing.



Apache Kafka

A distributed streaming platform for building real-time data pipelines and applications.



Apache Flink

A distributed stream processing framework for high-performance, mission-critical applications.

Data Management Platforms



ESS-KR Collections Browse ESS-KR ▾ Statistics

🔍 🌐 Log In ▾

EthioStat Digital Archive Empowering Data Access Knowledge Discovery

➔ Log in

New user? Click here to register.

Have you forgotten your password?

The "EthioStat Digital Archive" serves as the premier digital library system offered by the Ethiopian Statistical Service (ESS), designed to facilitate seamless access to a comprehensive collection of statistical data, reports, publications, and research materials.

By providing a centralized hub for statistical data and research materials, the EthioStat Digital Archive plays a pivotal role in advancing evidence-based decision-making, fostering innovation, and driving socioeconomic development in Ethiopia.

🔍 Search

ESS Knowledge

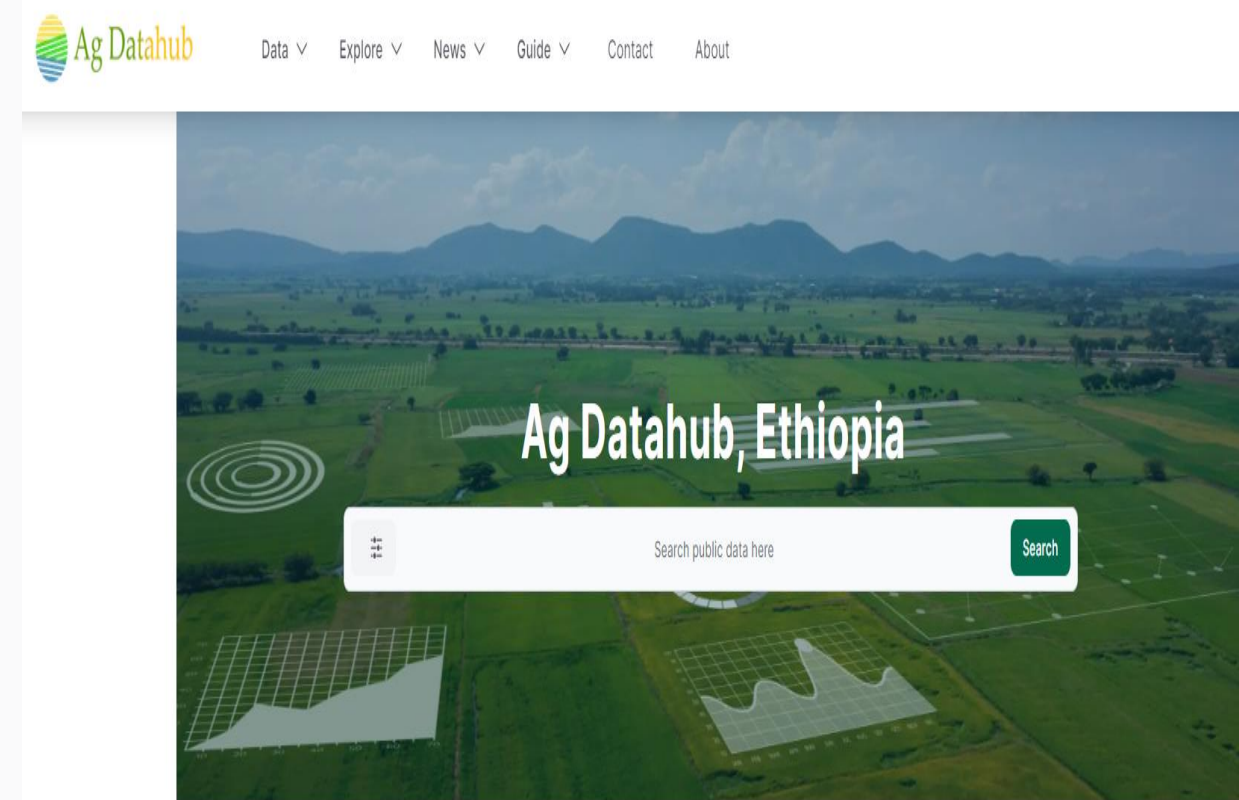
Categories

(<https://datahub.moa.gov.et/>)

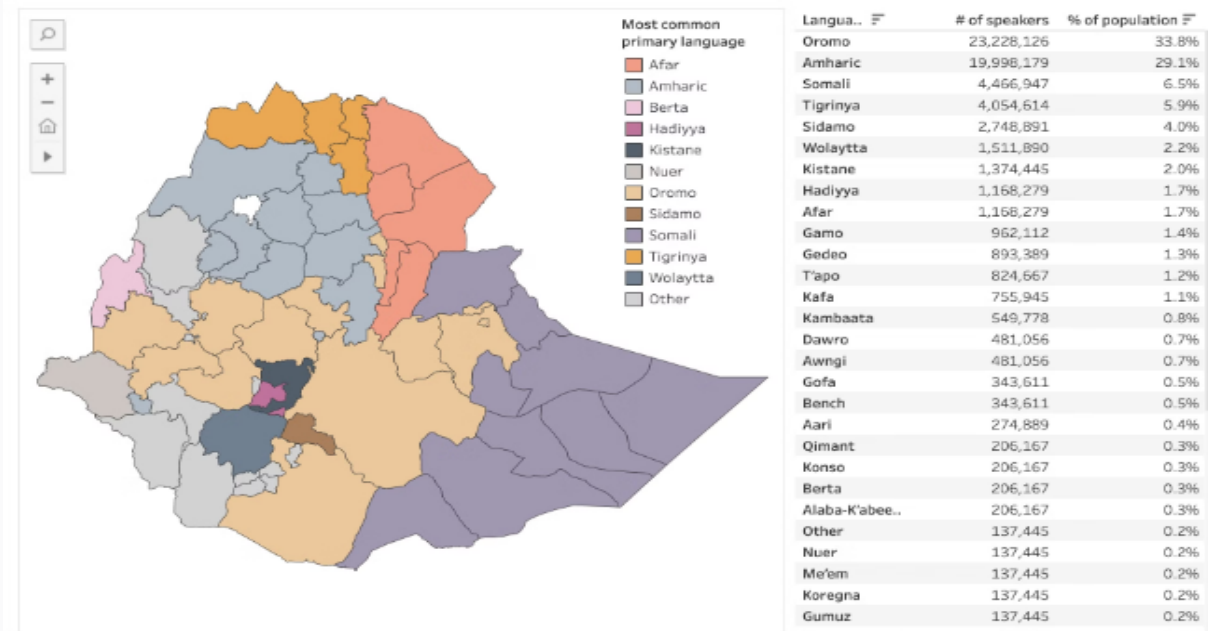
The National Datahub is a centralized platform that aggregates and curates data from various government agencies and other sources in Ethiopia. It serves as a one-stop-shop for accessing a wide range of data related to the country's development, economy, and social sectors.

NSIS(<https://nsis.moa.gov.et>)

The National Soil Information System (NSIS) is a comprehensive data management platform developed by the Ministry of Agriculture of Ethiopia. It serves as a central hub for collecting, storing, and disseminating agricultural and food security data from various sources across the country.



Language map of Ethiopia



Collaboration Areas

- Internal Capacity/Donor
 - Data use Policy for new data sources
 - Legislation (Proclamation)
 - Methodology Revision
 - Guidelines and Manuals in data quality and privacy
 - Contextualizing Big Data in Ethiopia
 - Data Management Systems
 - Capacity Building

Thank You!



KMS Governance

Module 8

Module Objectives

- Understand the concept of KM governance
- Knowledge management policy
- Describe KM positions of KM staff
- Explain KM metrics

KMS Governance

- **KM Governance** is the process of making and enforcing decisions regarding KM activities
- Outlines the roles and structures needed to ensure knowledge flow processes and activities take place.
- Clarifies who is responsible for what and how decisions are made.
- Ensures alignment of KM activities with core organizational objectives

KM Governance Elements

01

Clear KM policy

02

**Accountabilities for
KM activities**

04

**Measurement to
KM utilization**

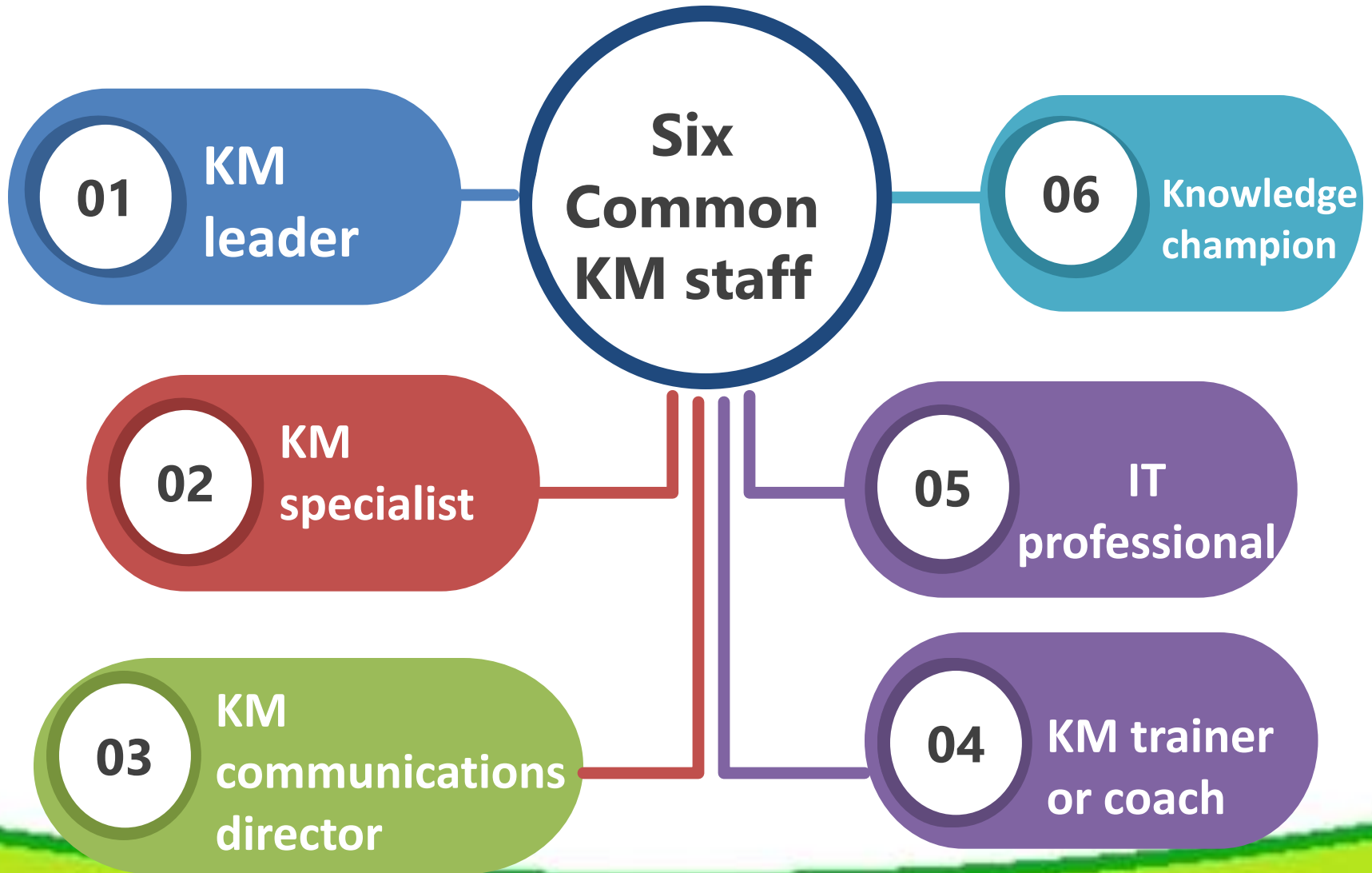
03

**Measurement for KM
performance**

Knowledge management policy

- The KM Policy sets the rules or standard for KM activities within an organization.
- Clarifies what is expected from everyone about KM
- Clarifies why KM is important to the organization
- Example of a Policy [Case 1](#) [Case 2](#)

Six Common KM Staff



KM Metrics

KM Metrics

- Knowledge is an intangible resource
- Difficult but its performance can be measured
- Needs to define your measurement goal
- There are two broad Measurement goals
 - Performance measurement
 - KMS Utilization measurement

KM Performance measurement

- Balanced Scorecard is a conceptual framework for converting an **organization's vision into a set of performance indicators**
- Frequently used Measurement
- Also used to measure **KM performance**

KM Performance measurement

01

Financial Dimension

measures such as operating income, return on investment, and economic value added.

Customer Dimension

customer satisfaction, retention, and market share

02

03

Internal Business Processes

Consists of measures such as cost, throughput, and quality.

Learning and Growth

measures such as worker's learning, satisfaction, retention and skill sets

04

KMS Utilization

01

**Knowledge
Contributions**

04

**Content
Interactions**

02

User Feedback

05

**Number of
Articles Updated**

03

**Knowledge use
(Downloads)**

06

**Response time to
update information**

Summary

- KM governance ensures alignment of KM activities with organizational objectives
- KM Metrics measures KM performance and KM utilization
- Balanced score card is used as a measure of KM performance

Discussion

- How do you measure KM performance at ESS?
- Is there any other method you recommend to measure the KM performance at ESS?



KM References for further Reading

1. Knowledge management - <https://www.ibm.com/topics/knowledge-management>
2. KM in Indonesia statistics office - <https://www.mdpi.com/2306-5729/6/5/48>
3. Must read - SECI, Ba and Leadership: a Unified Model of Dynamic Knowledge Creation
4. Knowledge hub - <https://www.linkedin.com/pulse/knowledge-hub-how-create-central-repository-success-sarah-wakuthii-5fwpf>
5. Knowledge management principles and practices (textbook) - <https://nibmehub.com/opac-service/pdf/read/Knowledge%20Management%20in%20Theory%20and%20Practice%20by%20Kimiz%20Dalkir-%20Jay%20Liebowitz.pdf>
6. KM systems and Practice (textbook) [https://helpjuice.com/pdfs/Knowledge_Management_A_Theoretical_And_Practical_Guide_Emil_Hajric\(PDF\).pdf](https://helpjuice.com/pdfs/Knowledge_Management_A_Theoretical_And_Practical_Guide_Emil_Hajric(PDF).pdf)

KM References for further Reading

- Knowledge sharing guide - <https://www.continu.com/blog/knowledge-sharing>
- Storing telling - <https://storytelling.co.za/creating-organizational-stories/>
- Story examples - <https://changemanagementinsight.com/storytelling-in-the-workplace-examples-and-best-practices/>
- Seven Key components - <https://www.kminstitute.org/blog/7-key-components-successful-knowledge-management-strategy>
- Knowledge Management technologies - <https://www.sciencedirect.com/science/article/abs/pii/S0957417403000435>
- KM Technology components - <https://stangarfield.quora.com/Knowledge-Management-Technology-Components>
- KM Unit structure and roles - <https://shelf.io/blog/knowledge-management-roles-and-responsibilities/>
- KM policy - <https://issuu.com/public-it/docs/itilst0301> knowledge management policy