

# KNOWLEDGE MANAGEMENT IN THE WATER SECTOR



**Dr Lakhdar Boukerrou**  
**Director, International Programs and Global initiatives**  
**Research Professor**  
**College of Engineering and Computing**  
**Affiliate Faculty, African and African Diaspora Studies**  
**Florida International University**

**Water and Public Health Workshop**  
**Freetown, Sierra Leone**  
**August 19-21, 2019**

## OVER TIME EVOLUTION



### 1. Age of agriculture (10 000-2 500 BC)

- Wealth was defined as the possession of land



### 2. Age of industry (1760-1840)

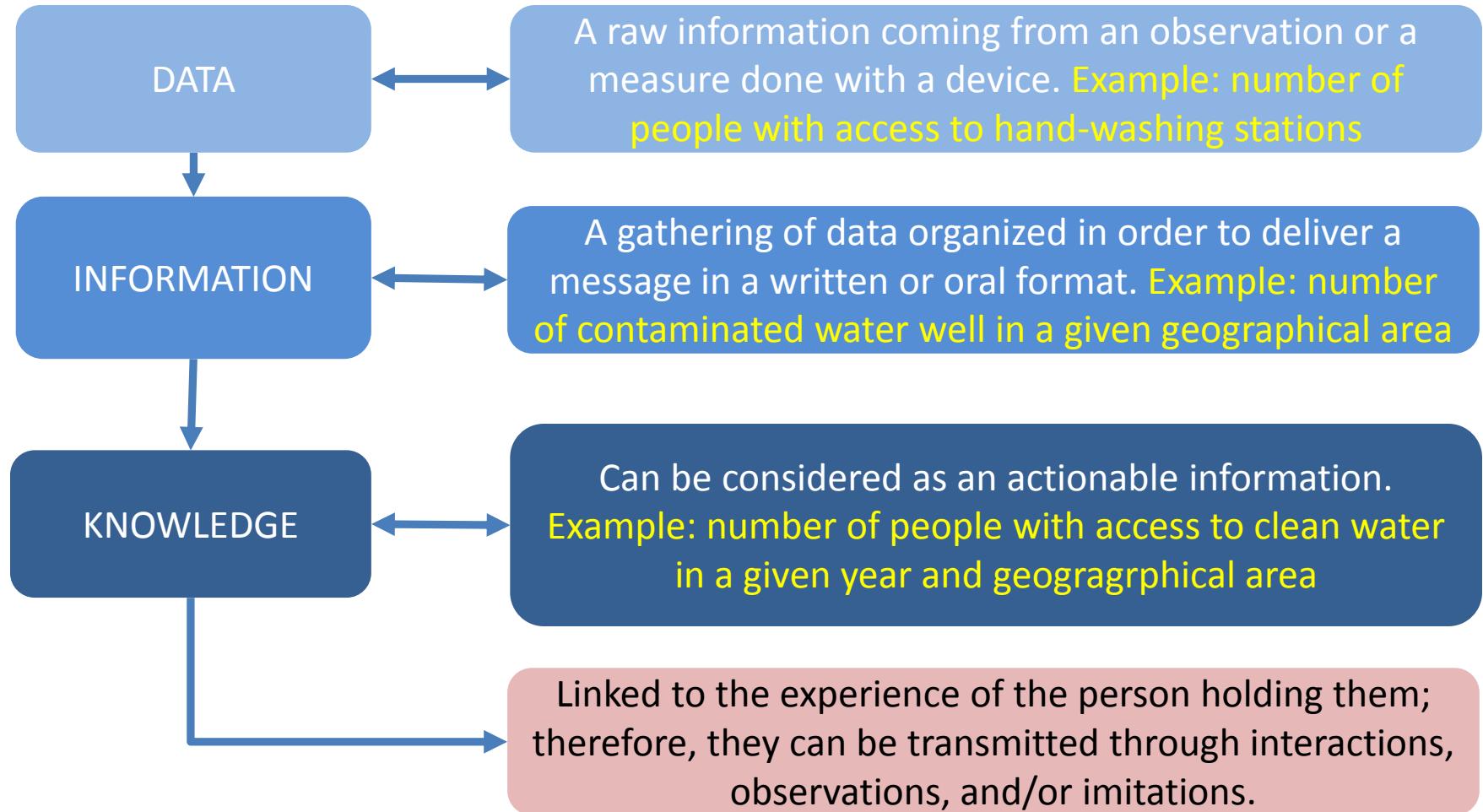
- Wealth was defined as the possession of capital (factories)



### 3. Age of knowledge (1991 to present)

- Wealth is based on the possession of knowledge and the ability to use it to create or improve goods and services

## DATA VS INFORMATION VS KNOWLEDGE



## MANAGING KNOWLEDGE

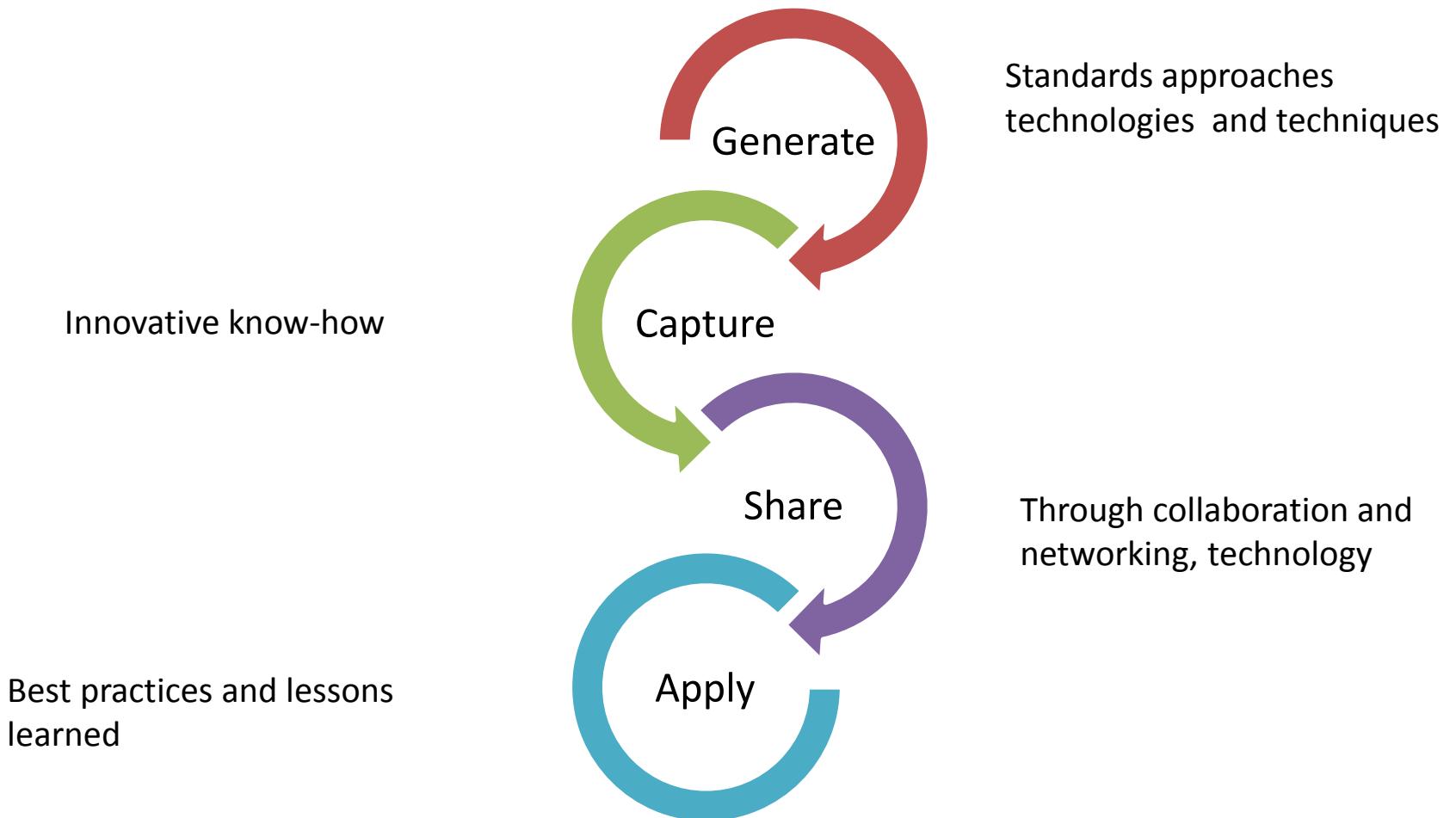
**Knowledge management takes into consideration the mastery of the processes to create, store, and share knowledge, as well as the related activities, including the identification of the current state, the determination of the needs, and the improvement of the processes to address the needs**



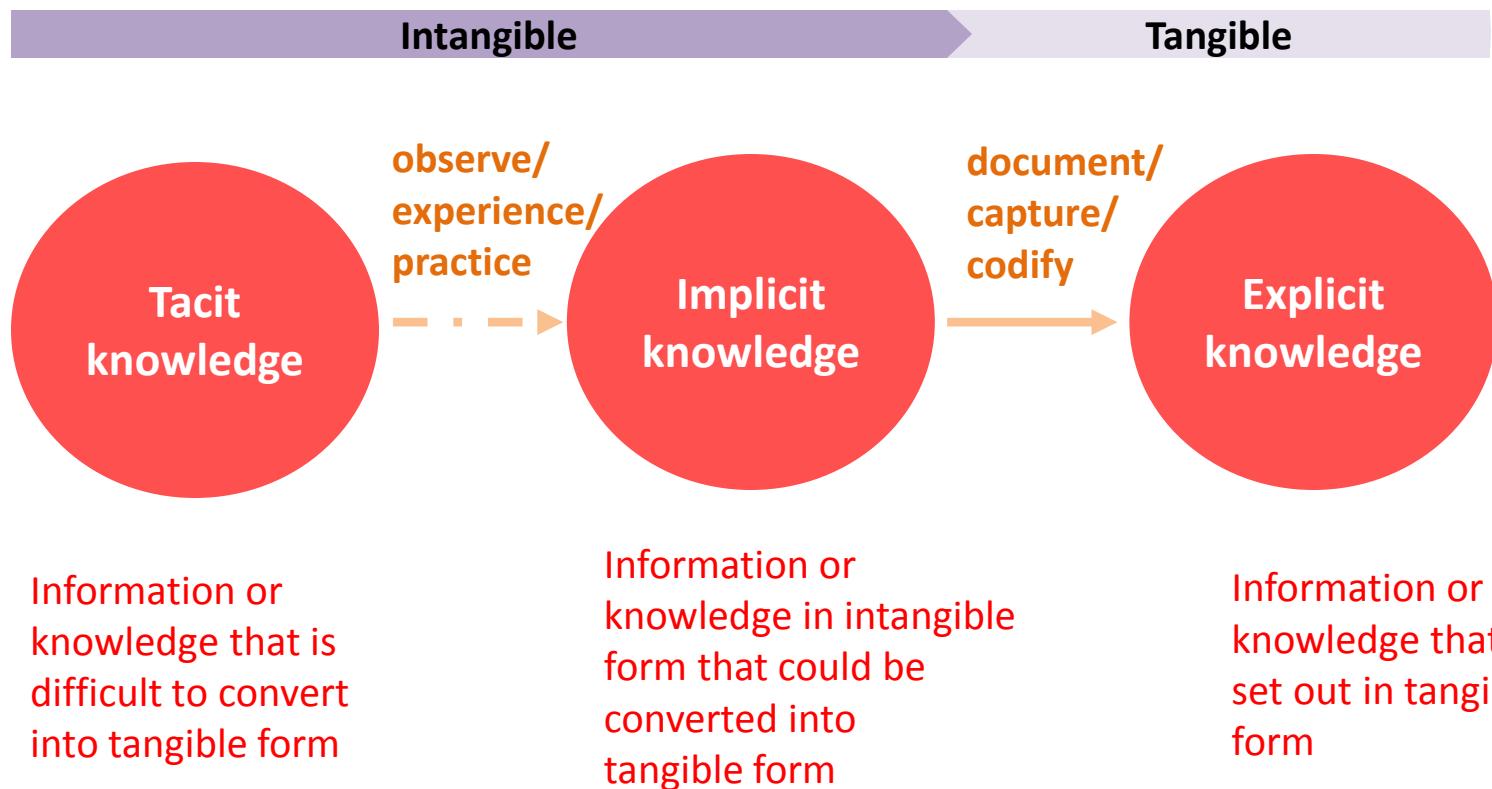
**What to avoid in managing Knowledge:**

**In promoting excellence, it is wise not to make the same mistakes and seek to reinvent the wheel. Others probably faced the same issues, and the solutions they came up with can help us move forward more effectively**

## KNOWLEDGE MANAGEMENT FRAMEWORK



## FORMS OF KNOWLEDGE



## EXAMPLES OF KNOWLEDGE 1/2

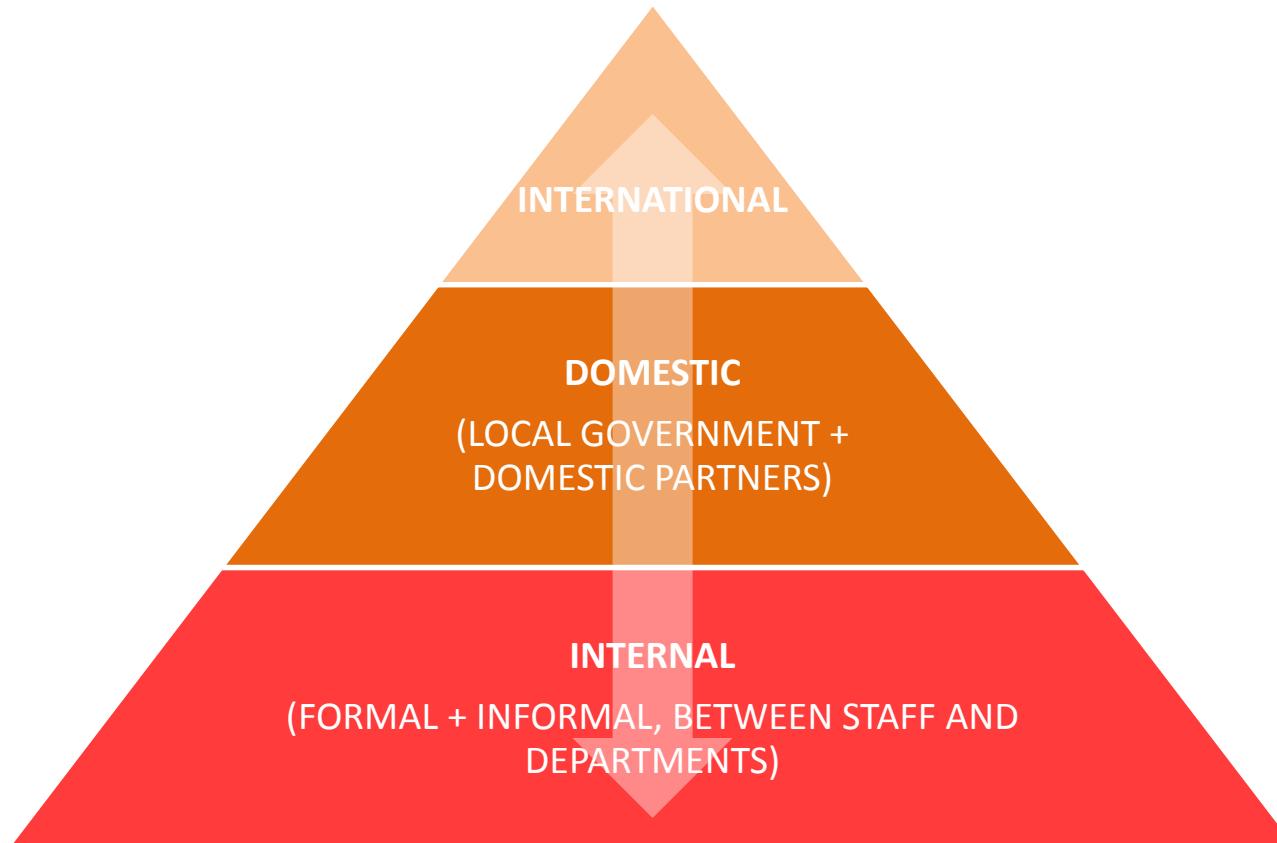
The examples below provide insights into what knowledge is:

- Knowledge of a specific work such as **the way to treat waste or the way to teach people how to treat drinking water**
- Knowledge of a good practice, if not the best one, to perform a specific task for example **hand washing**
- Knowledge of how to sort out an issue for example **how to address water contamination**
- Knowledge of tools/techniques for an effective and efficient management of projects/programs/companies

## EXAMPLES OF KNOWLEDGE 2/2



## KNOWLEDGE FLOW



## KNOWLEDGE SHARING BENEFITS

The promotion of knowledge helps:

- Support learning as it actually happens
- Fill information gaps
- Increase efficiency
- Promote innovation
- Encourage leadership

## KNOWLEDGE AS ACTIONABLE INFORMATION

For information to be actionable, these elements are required:

**Experience:**

improves judgment

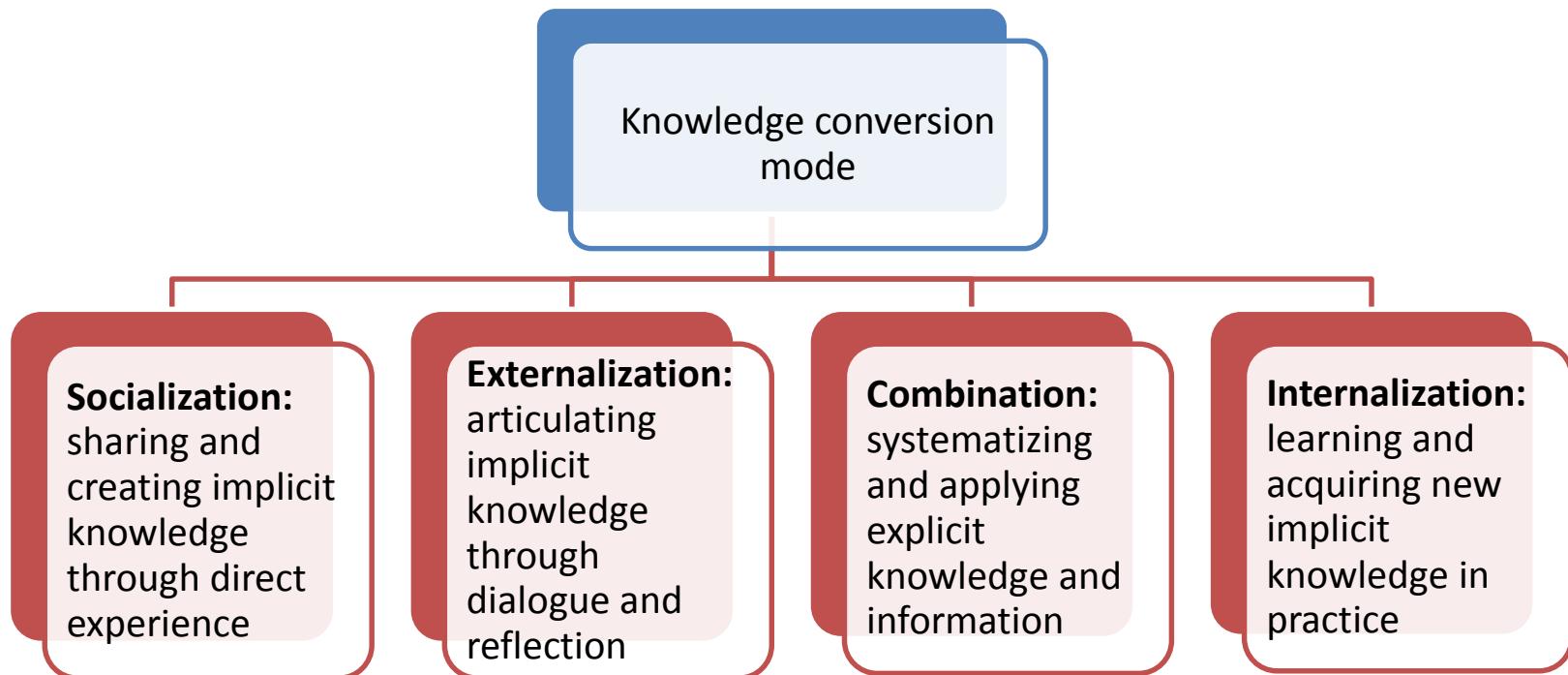
**Values,  
assumptions,  
beliefs:**

color judgment

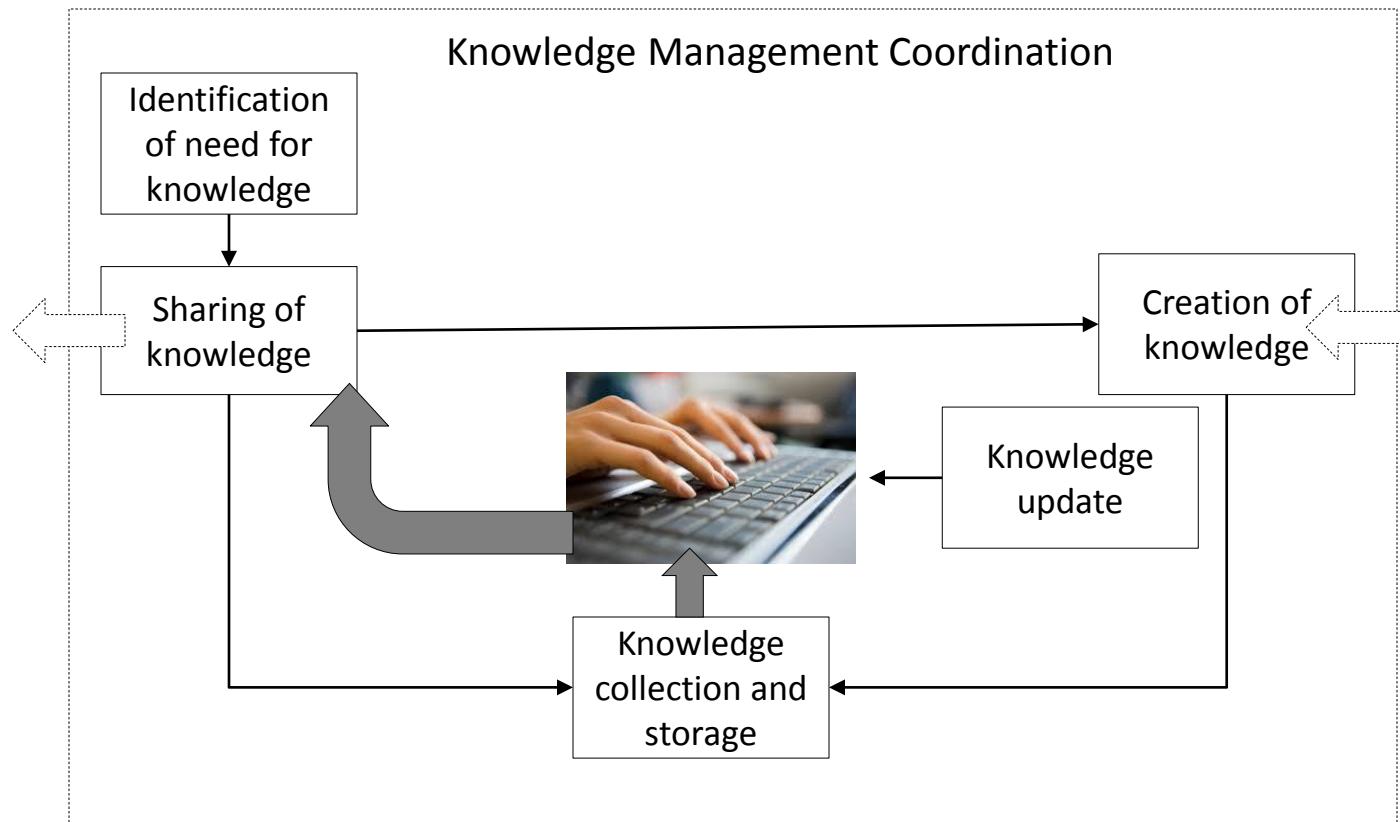
**More  
knowledge:**

help to know What  
to do, and when and  
how to do it

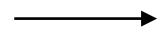
## KNOWLEDGE CONVERSION MODES



# KNOWLEDGE MANAGEMENT PROCESS MODEL



External knowledge flows



Activity/activation flows



Internal knowledge flows

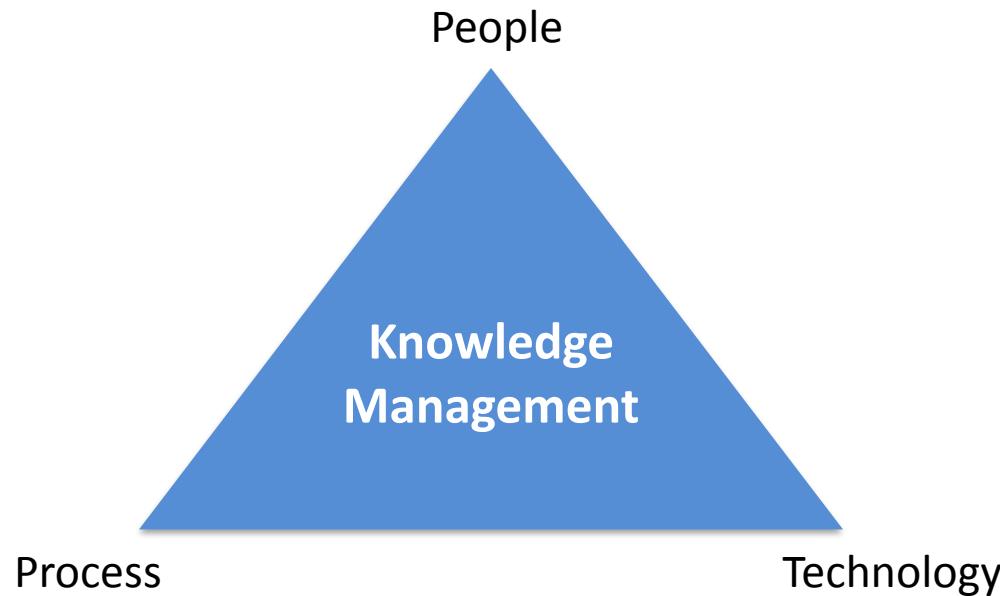
## WHY MANAGE KNOWLEDGE?

Knowledge management is a key enabler to:



- Promote a collaborative and integrated approach for creating and capturing an organization's knowledge assets
- Allow for knowledge sharing
- Improve the performance of organizations
- Reduce time and cost
- Empower employees to produce new insights and ideas
- Bring new workers up to speed quickly

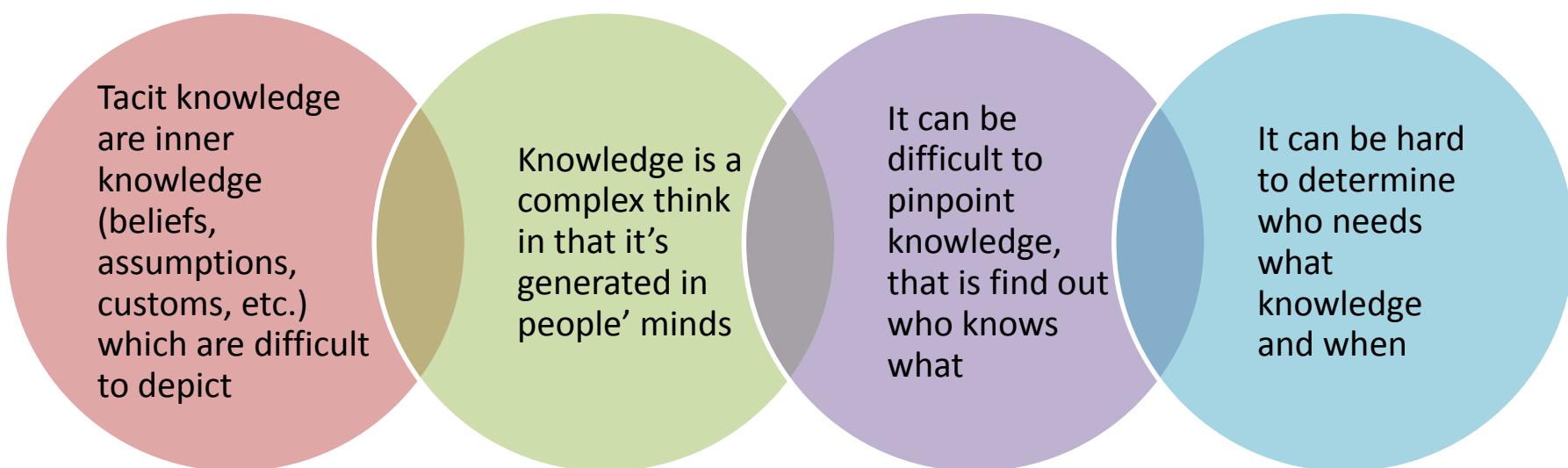
## KNOWLEDGE MANAGEMENT COMPONENTS



Process component includes methodologies and standards to document best practices and case studies

Technology component provides functionality to support information sharing, collaboration, workflow, and document management across the water sector

## ISSUES REGARDING THE NATURE OF KNOWLEDGE



Tacit knowledge are inner knowledge (beliefs, assumptions, customs, etc.) which are difficult to depict

Knowledge is a complex think in that it's generated in people' minds

It can be difficult to pinpoint knowledge, that is find out who knows what

It can be hard to determine who needs what knowledge and when

## ISSUES REGARDING THE NATURE OF PEOPLE

Chances to influence people' behavior are limited and hard

People tend to take their decisions largely on the basis of their personal attitudes, beliefs, experiences

Because people fear that they will not be needed anymore after passing their knowledge to others, they often tend to keep their knowledge for themselves

People may not get a message to an audience because of the types of language used (e.g. : message is too technical)

People sometimes have different views about things

## ISSUES REGARDING ORGANIZATIONS

Projects/programs' organizational culture may not encourage employees to share knowledge

Large organizations are often characterized by different cultures, languages, and time zones which can be a challenge for good knowledge management

Lack of smart people and incentives can hinder the flow of knowledge in projects/programs

When growing, organizations tend introduce more hierarchies which reduce their flexibility and thereby their ability to manage knowledge

## West Africa Water Supply, Sanitation, and Hygiene Program (USAID WA-WASH)

### KNOWLEDGE MANAGEMENT FAILURE FACTORS 1/2



## West Africa Water Supply, Sanitation, and Hygiene Program (USAID WA-WASH)

### KNOWLEDGE MANAGEMENT FAILURE FACTORS 2/2

**Resultant failure factors:**

Overemphasis on formal learning, systematization, and needs

Improper implementation of technology

Improper budgeting and excessive costs

Lack of widespread contribution

Lack of relevance, quality, and usability

Lack of responsibility and ownership

## POSSIBLE SOLUTIONS

**The poor level of knowledge management and information sharing can be remedied through the following actions :**

- Improve the quality of the dissemination tools (internet, magazines, etc.)
- Increase internet access and speed
- Raise funds for information sharing (conferences, workshops, etc.)
- Make available lessons learned, techniques, reports, and any support documents
- Develop smarter and more interactive systems
- Promote knowledge management and information sharing culture within and between institutions

## CONCLUSION

Access to clean water, sanitation, and hygiene services is still low in many African countries.

One of the solutions is knowledge sharing which relies upon concrete tools to make projects/programs more operational.

It is true that obstacles to knowledge management and information sharing exist; however, with better coordination between stakeholders and good quality information dissemination tools, knowledge management and information sharing will improve significantly for the benefit of many.



# THANK YOU

Dr Lakhdar Boukerrou  
Director, International Programs and Global Initiatives  
Research Professor  
African and African Diaspora Studies



Florida International University  
College of Engineering and Computing  
11555 West Flagler Street – EC 2450B  
Miami, Florida 33174

Tel:+1-305-348-5976  
Email: [lboukerr@fiu.edu](mailto:lboukerr@fiu.edu)  
Website: [www.cec.fiu.edu](http://www.cec.fiu.edu)  
[https://boukerrou.eng.fiu.edu](http://boukerrou.eng.fiu.edu)

