

CE 726

Knowledge Management and Organizational Learning

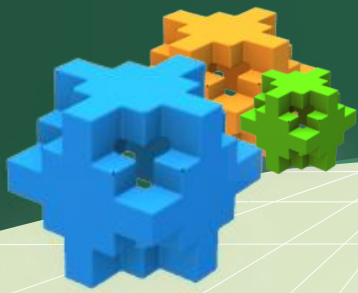


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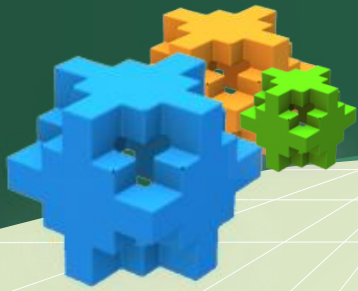


OUTLINE



- ❖ Introduction
- ❖ Definitions
- ❖ Knowledge Management
- ❖ Organizational Learning
- ❖ Drivers
- ❖ Applications in UK, US and TR
- ❖ Barriers
- ❖ Models Developed
- ❖ Conclusion
- ❖ Further Studies

To define the knowledge,

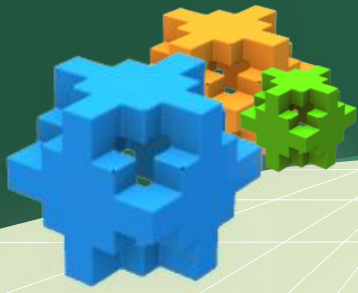


Wisdom

Knowledge

Information

Data

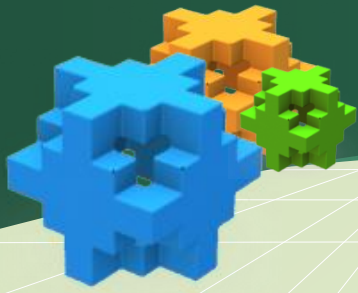


Definitions

❖ DATA represents

Facts,
Observations,
Values of Results,
Quantitative,
Has not been processed,

It is obtained from Observations (input).



Definitions

❖ INFORMATION relates to,

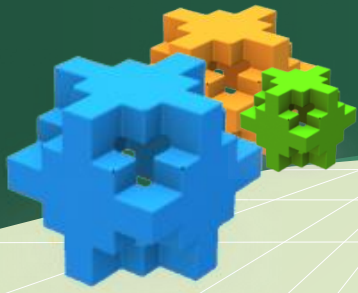
structured data

meaningful data

describe a particular situation or condition

It gives us definitions.

(what, who, when, where)

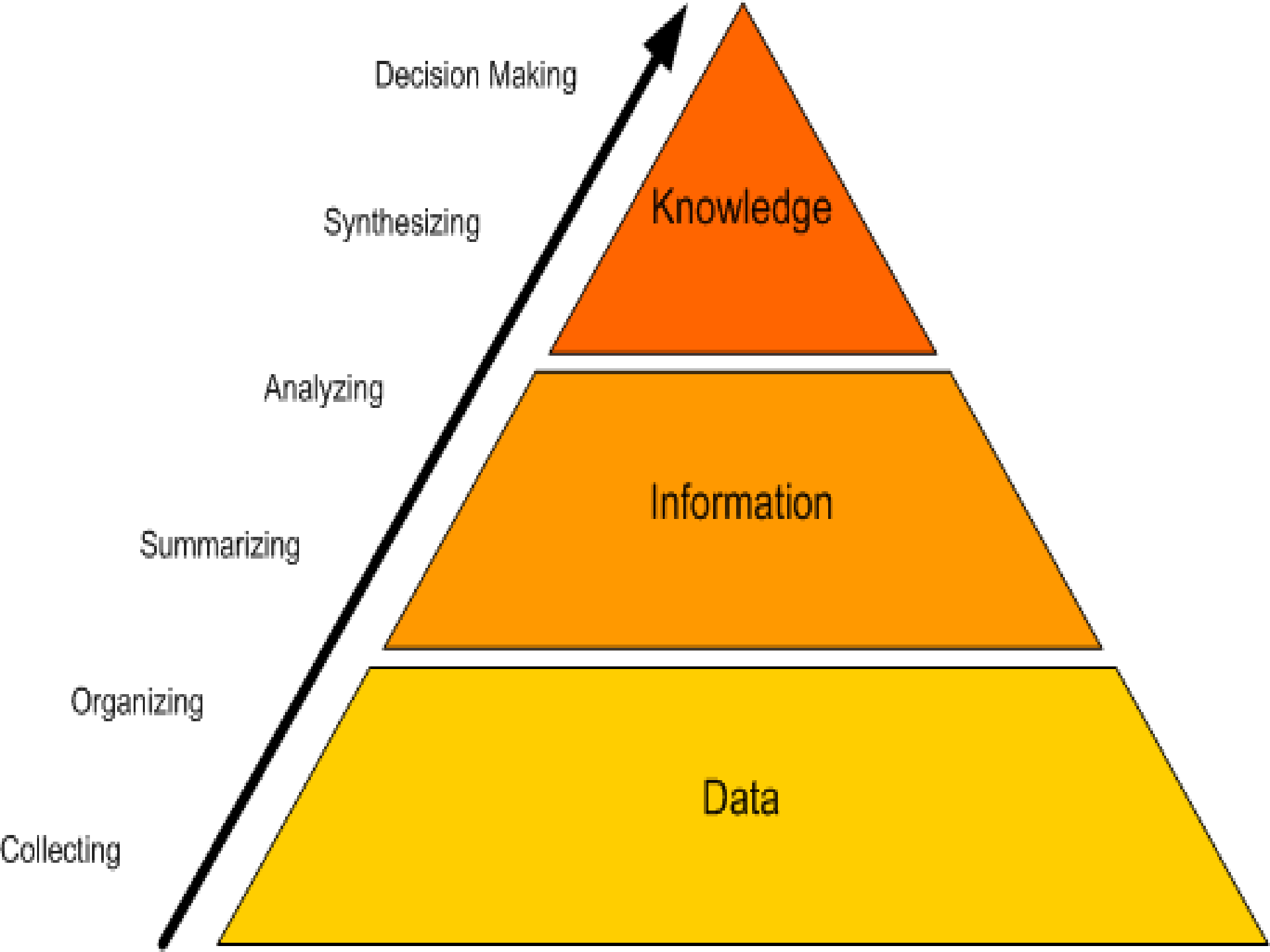


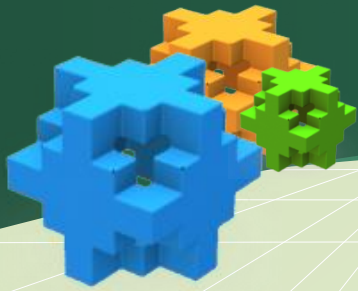
Definitions

❖ KNOWLEDGE consists of

know-how,
truths,
perspectives,
concepts,
judgements,
methodologies,

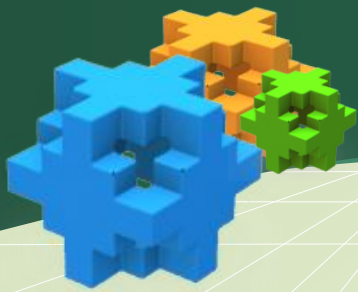
It is about action and decision-making capability.





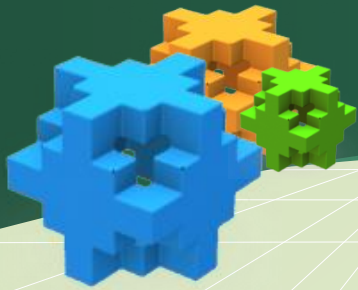
Types of Knowledge

- ❖ Tacit Knowledge (informal or soft)-[knowing how](#)
 - obtained from experience
 - stored in people's head
 - difficult to document
 - difficult to communicate or share with other people
- ❖ Explicit Knowledge (formal or hard)-[knowing that](#)
 - explained and recorded
 - easily documented and transferred
 - physically stored in either paper or electronic format



Knowledge Management

- ❖ **KM** can be defined as a systematic process that creates, captures, shares, and analyzes knowledge in ways that directly improve performance. It is about helping people to communicate and share information. (Parlby, D. 1998)
- ❖ The aim of Knowledge Management is to support **Organizational Learning** (Lehner and Maier, 2000)



Central concept of KM

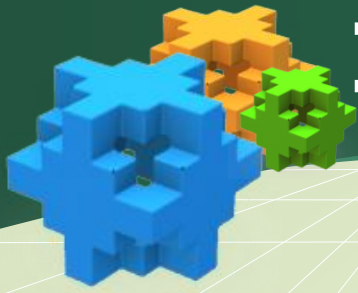
- ❖ Putting individuals in touch with one another to share their tacit knowledge.
- ❖ Transforming individuals' tacit knowledge into explicit knowledge, which can be used by the entire organization.

So, Knowledge Management can be interpreted as the ability to get the right information to the right people at the right time, and in the right place.



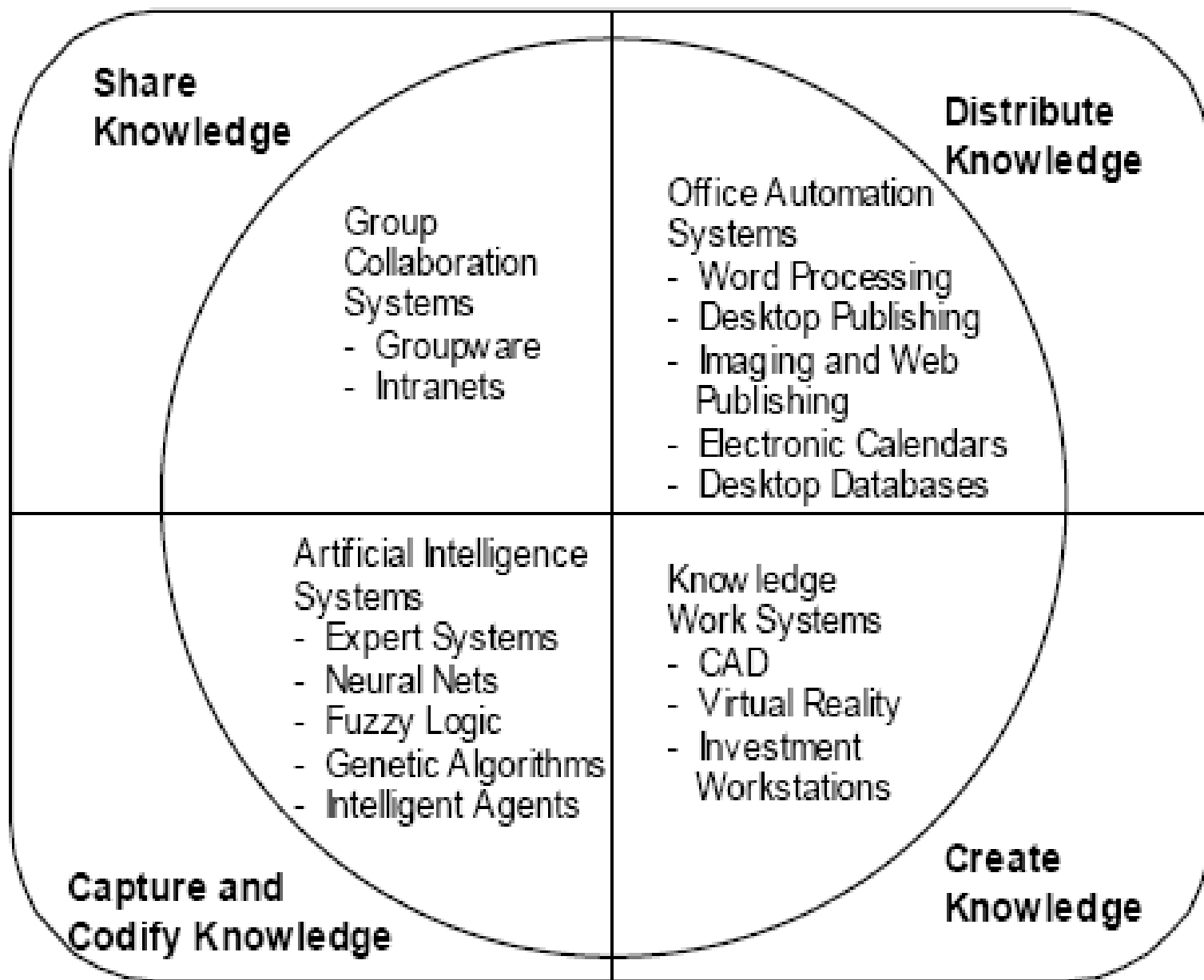
Four Processes of Knowledge Management

- ❖ Creating of knowledge
- ❖ Distributing knowledge
- ❖ Sharing knowledge
- ❖ Capturing and Codifying knowledge

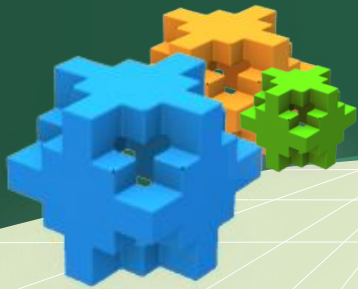


Information Technology

- ❖ IT is the general term that specifies computer-based tools used to gather, code, process, store, transfer and apply data between machines, people and organizations.
- ❖ Laudon and Laudon (1998) classify information systems for knowledge management into four main categories;

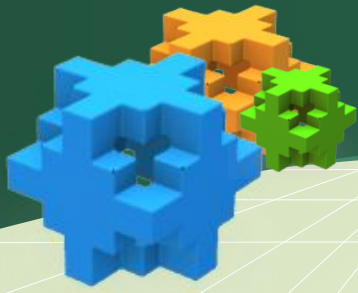


Information systems for knowledge management (Laudon & Laudon, 1998)



Why Knowledge Management?

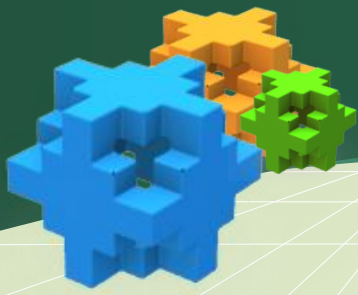
- ❖ It creates value, and gain and sustain competitive advantage.
- ❖ Saves money by not reinventing the wheel for each new project.
- ❖ Reduces costs by decreasing and achieving economies of scale in obtaining information from external providers.
- ❖ Increases productivity by making knowledge available more quickly and easily.
- ❖ Provides workers with a more democratic place to work by allowing everyone access to knowledge.
- ❖ Learning faster to stay competitive.



Organizational Learning

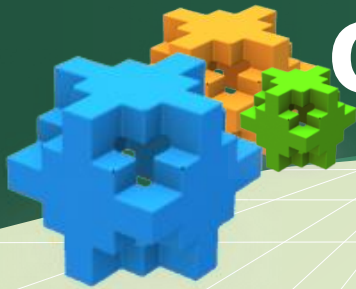
❖ Dodgson (1993) explains OL as

- the way firms build,
- supplement,
- organize knowledge,
- routines around their activities,
- within their cultures,
- adapt and develop organizational efficiency by improving the use of the broad skills of their workforces.



Organizational Learning

- ❖ Kullunga (2001) defined OL as encouraging a learning curve within an organization such that employees at all levels, individually and collectively, continually increase their capacity to improve their level of performance.
- ❖ From these definitions, OL can be summarized as the set of actions to acquire, share and interpret knowledge among the members whose main objective is to increase company performance through improved quality of decision-making in the organization.

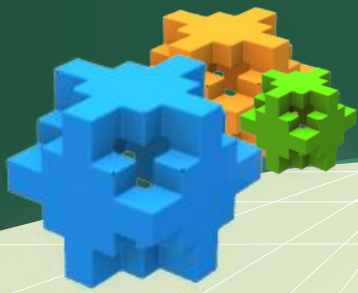


Organizational Learning

❖ The most important point is,

the existence of a knowledge management infrastructure within the organization whose mandate is to identify, analyze, manage, maintain and disseminate knowledge to appropriate individuals within the organization and externally to others (Liebowitz et al., 1999). This can be only be achieved through the proper combination of relevant systems and skills that are influential in the learning process of an organization.

According to Peter Senge, five learning skills are;



Aspiration

- Personal Mastery
- Shared Vision

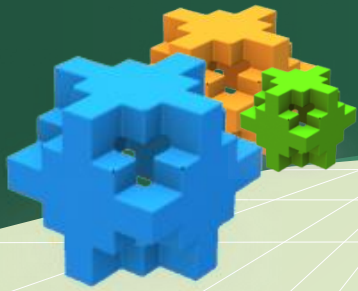
Understanding Complexity

- Systems Thinking

Reflective Conversation

- Mental Models
- Team Learning

Source: Adapted from Peter Senge. 1994. *The Fifth Discipline*. New York: Currency Doubleday.



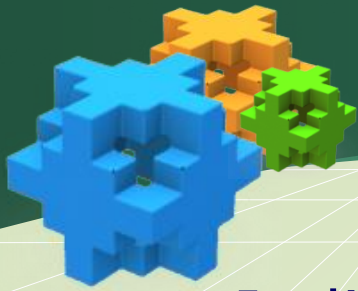
Levels of Learning

Jeffries et al. (2003) developed a perspective by defining the levels of OL as three phases beginning at the individual level by interpreting and reflection, maturing at group level by integration and conceptualization and finally reaching the organization level by institutionalizing and experimentation.

Individual Learning

Group/Team Learning

Organizational Learning



Levels of Learning

Individual Learning is the foundation for the existence of organization's learning and it should be enhanced to lead to more effective OL.

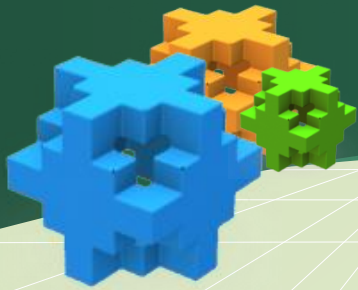
Group/Team Learning is an inseparable step of OL since teams provide new approaches to the learning process, cause fundamental organizational changes by functioning as a bridge between the individuals and the organization (Marquardt, 1996).

Organizational Learning requires the crucial step of the transformation of individual learning into OL.



So, OL necessitates four main events defined by Crossan et al.'s (1990),

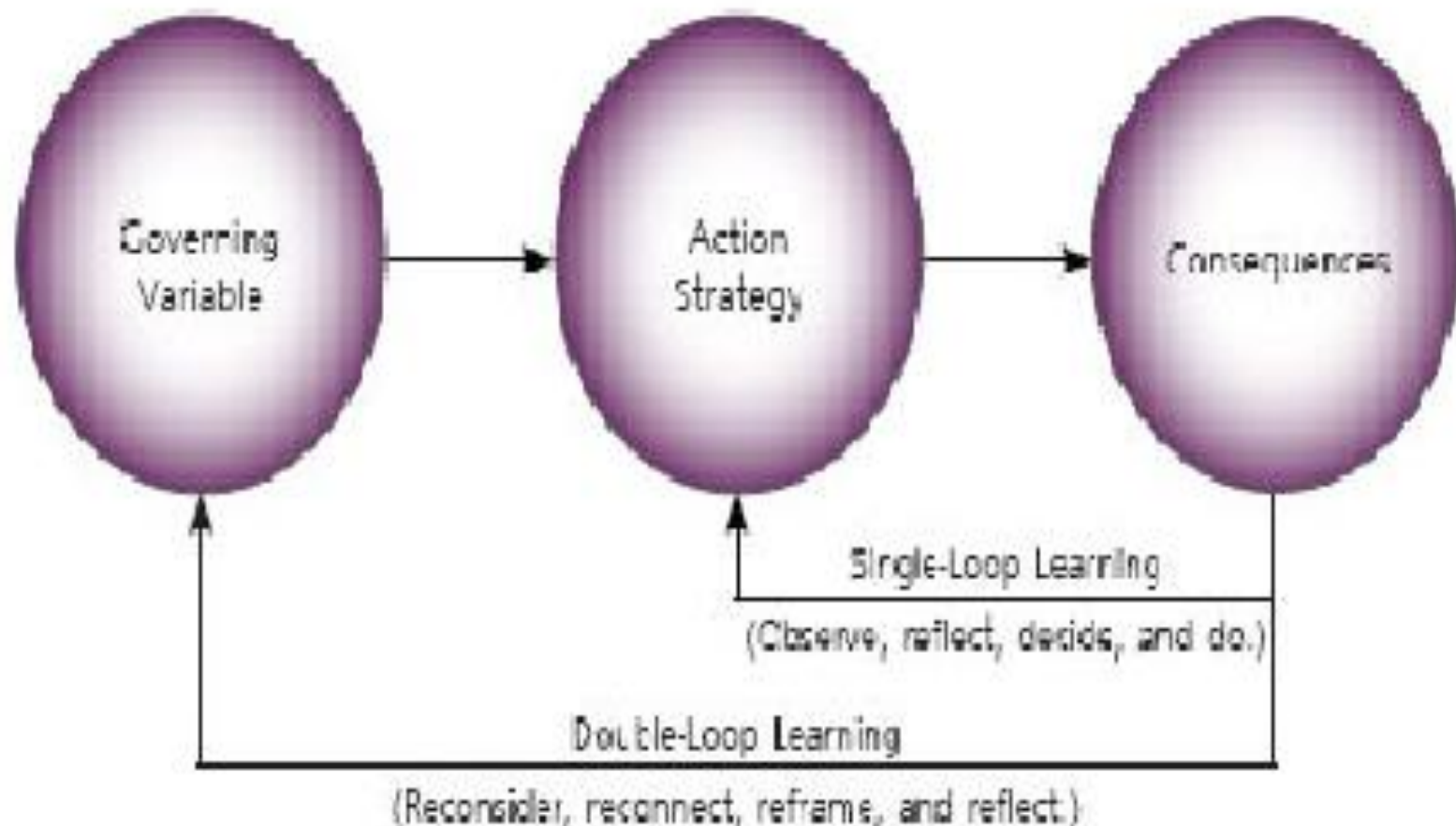
- 1 The preconscious recognition of the possibilities inherent in a personal experience
- 2 Interpreting, the explanation of an idea to oneself and to others.
- 3 Integrating, the developing of a shared understanding and coordinated action among individuals.
- 4 Institutionalizing, the process of ensuring that actions are made routine.



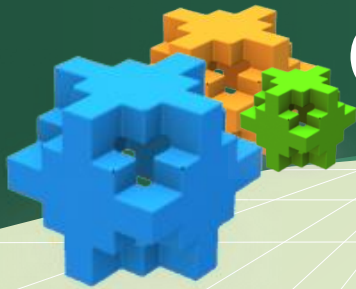
Types of Learning

- ❖ Single-loop learning involves an organization to respond to changes in its environment by detecting errors and correcting them, but maintaining its existing organizational norms.
- ❖ Double -loop learning, on the other hand, involves the revision of organizational culture, assumptions, guidelines, objectives, strategies and structure of an organization. It is a process of creative renewal and rediscovery of an organization to remain competitive (Senge 1990).

Single-Loop and Double-Loop Learning

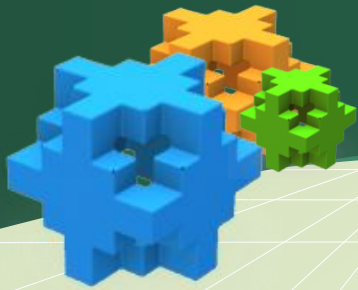


Source: Adapted from Chris Argyris and Donald Schon, 1978, *Organizational Learning: A Theory of Action Perspective*. Reading, Mass: Addison-Wesley.



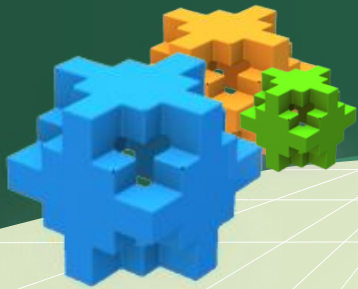
Organizational Transformation

- ❖ As Huber(1991) states, organizations whose structures, processes and technologies are not well suited to deal with the increasing environmental complexity and knowledge are unlikely to survive. Around the shared vision and culture, organization should develop new strategies and structures so as to become a learning organization (Marquardt, 1996). For an organization,
 - Vision
 - Culture
 - Structure
 - Strategy



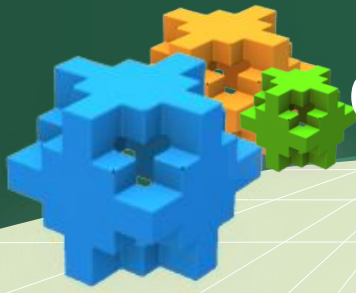
Organizations

- ❖ **Vision:** The vision of the organization is represented by the commitment for a certain goal, direction or hope for the future of the organization. According to Marquardt(1996), the first and the most important step in becoming a learning organization is to build a solid foundation of shared vision about learning.
- ❖ **Culture:** Walsh and Ungson (1991) define culture as the conscious patterns of assumptions, values, and beliefs shared by a collective (cited in Berthon et al., 2001). Culture acts as a kind of knowledge filter; it specifies what information is of value, influences the interpretation of information and coordinates collective action taking (Weick, 1994 cited in Berthon et al., 2001).



Organizations

- ❖ **Structure:** The key characteristic of the structure of the organization is that, it links the various elements of the organization through the transformation of information. As emphasized by Salaman and Butler (1994), the organizational structures surrounding a project appear to centrally influence a project's tendency to perform learning activities and to contribute to the knowledge of the permanent organization (cited in Kasvi et al., 2003).
- ❖ **Strategy:** Identification, capture and transfer of knowledge within the firm are expected to be in alignment with the organization's strategic objectives. Strategy influences learning by providing a boundary to decision-making and a context for the perception and interpretation of the environment.



Organizational Learning Processes

- ❖ Knowledge Acquisition
- ❖ Information Distribution
- ❖ Information Interpretation
- ❖ Organizational Memory

Organizational Learning Processes

Knowledge Acquisition



❖ External

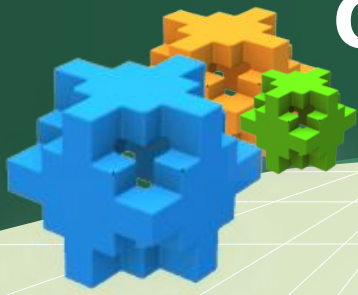
- monitoring the environment

❖ Internal

- information systems
- manage and retrieve information
- research
- development
- education
- training
- patent watching

Organizational Learning Processes

Information Distribution



❖ Informal

- Tacit know-how
- Letters
- Memos
- Conversations
- Stories by employees

❖ Formal

- Seminar
- Reports
- Information systems

Organizational Learning Processes

Information Interpretation



- ❖ Huber (1991) states that individuals and groups have prior belief structures that shape their interpretation of information and thus the formation of meaning.
- ❖ So, to share the information firstly, it should be interpreted.

Organizational Learning Processes

Organizational Memory

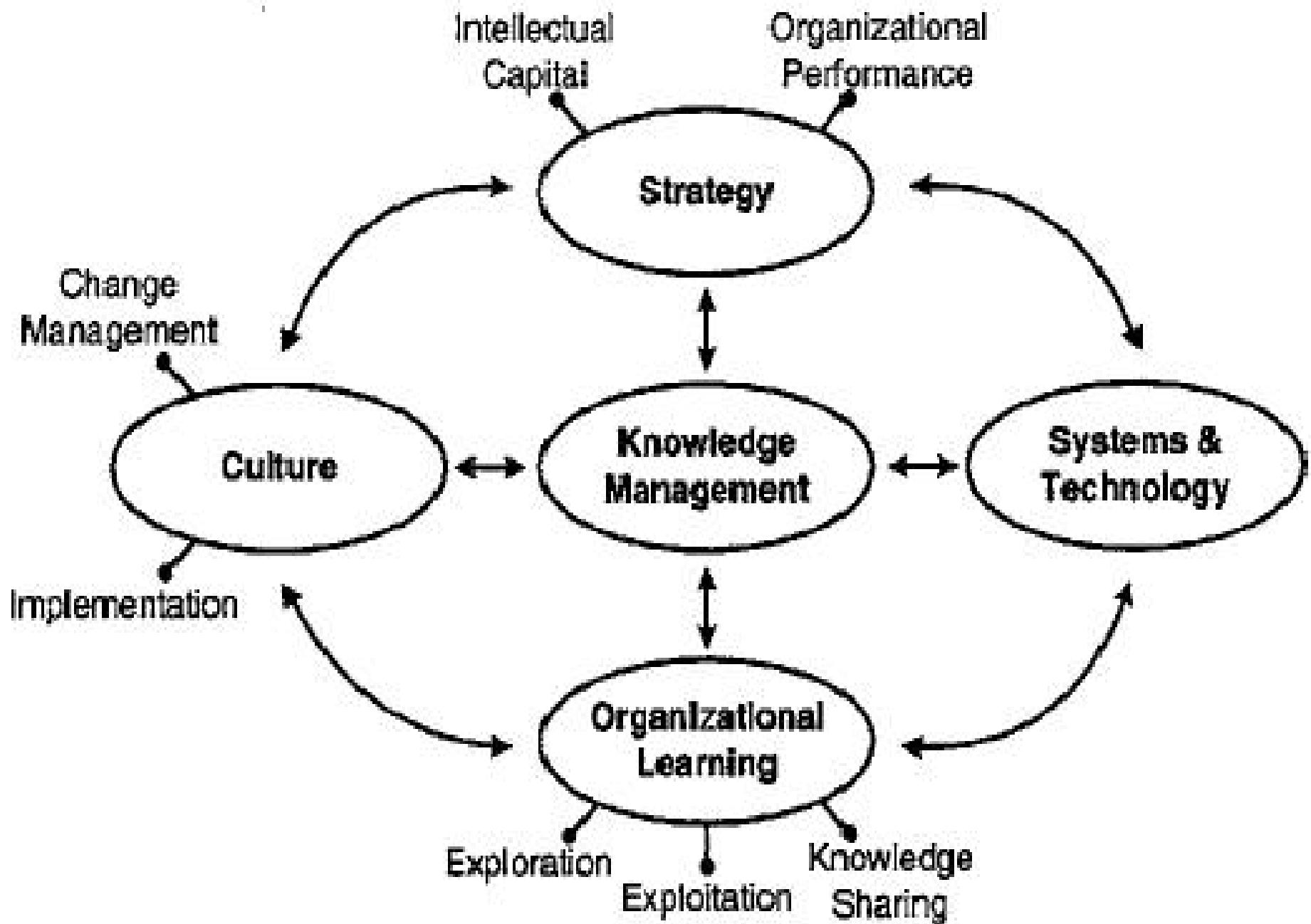


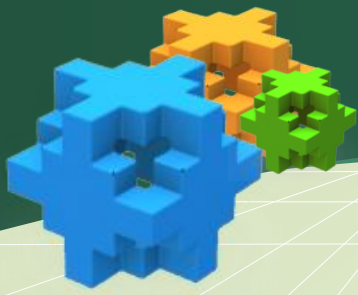
❖ Hard information

- Data
- Intranet/internet systems
- Warehousing

❖ Soft information

- Experiences
- Tacit know-how
- List of contacts



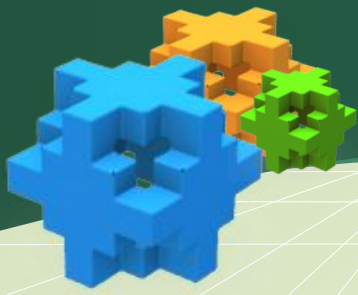


Drivers for KM and OL in Construction Industry

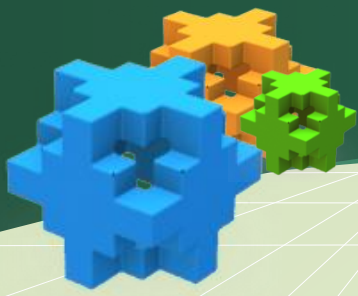
A learning organization is skilled at creating, acquiring, sharing, and applying knowledge, and embracing (fostering) change and innovation at all levels, resulting in **optimum performance** and **maximum competitive advantage**.



Drivers for KM and OL in Construction Industry

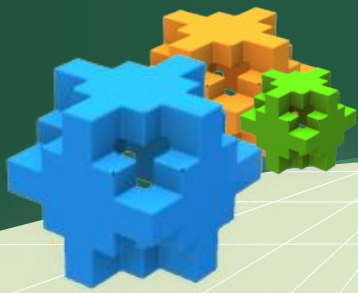


- ❖ To share valuable tacit knowledge
- ❖ To develop new products
- ❖ To become more innovative
- ❖ To increase client satisfaction(faster response etc.)
- ❖ To eliminate reworks



Drivers for KM and OL in Construction Industry *(Cont'd)*

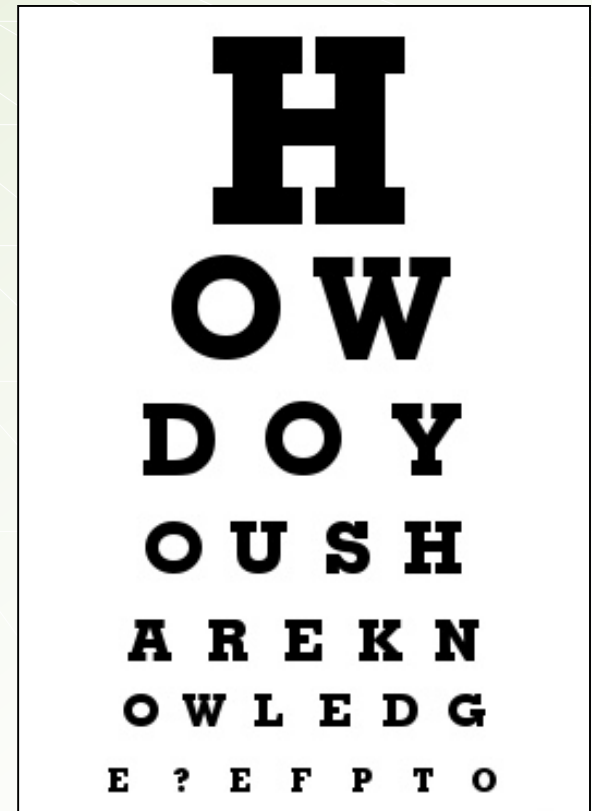
- ❖ To disseminate (spread) best practices
- ❖ To encourage continuous improvement
- ❖ To improve business performance (better bid preparation skills etc.)
- ❖ To enable employees to understand and apply knowledge to different scenarios

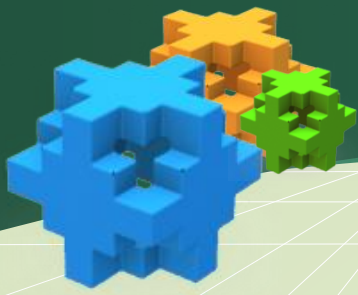


Barriers to KM and OL Implementations

A business development manager of Company E indicated that;

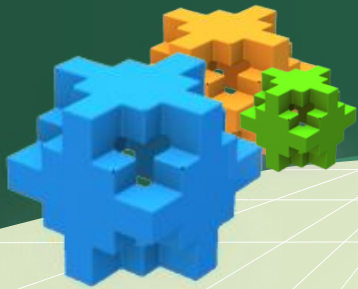
...experience gained through a project cannot be transferred to another engineer via paper; new employees cannot always show the same performance by reviewing the previous experiences of their pioneers...





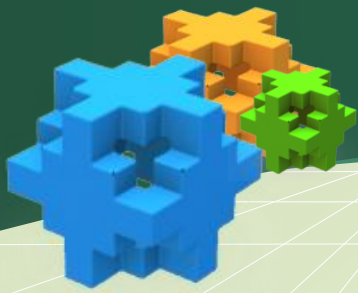
Barriers to KM and OL Implementations

- ❖ Difficulties in measuring the **value** added
- ❖ **Focus on projects** instead of organizations
- ❖ Traditions and conservative **company culture**
- ❖ **Cultural differences** due geographical diversity
- ❖ **Instable workforce** (high employee turnover)



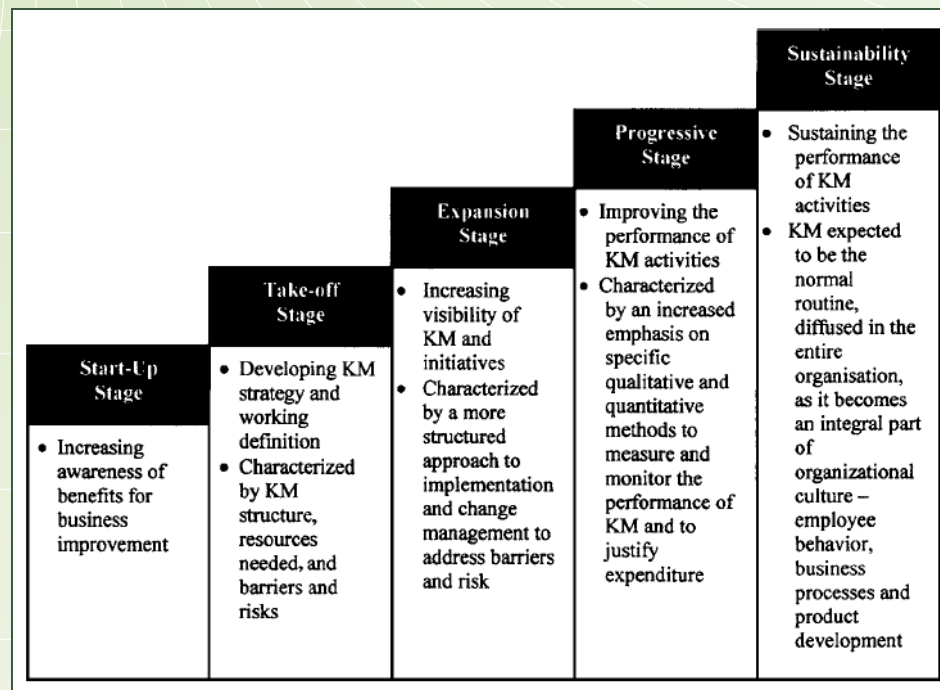
Barriers to KM and OL Implementations

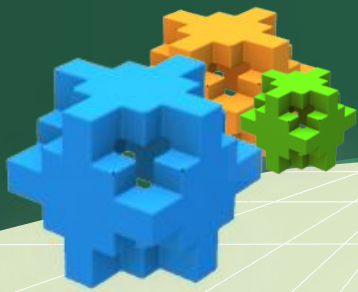
- ❖ Inappropriate **IT Infrastructure**
- ❖ **Insufficient time**
- ❖ **Insufficient funding**
- ❖ **Lack of executive support**
- ❖ **Lack of standard work processes**



Further Studies

❖ **STEPS Model** helps organizations to implement KM

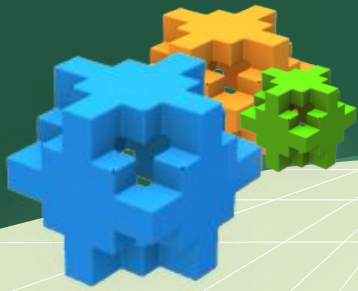




Further Studies

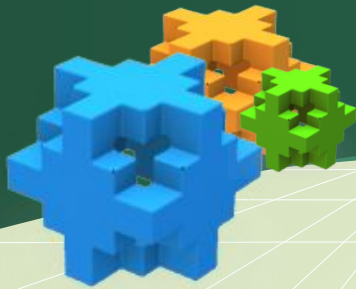
- ❖ **Learning Organization Maturity Model** defines 5 levels to achieve a learning organization

CHARACTERISTICS	LEARNING ORGANIZATION ENTITIES		
	ORGANIZATION	COMMUNITY	INDIVIDUAL
Leadership			
Processes and Infrastructure			
Communication/Collaboration			
Education			
Culture			



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Thank You !