IT4120-Knowledge Management

Data to Knowledge

Lecture 2

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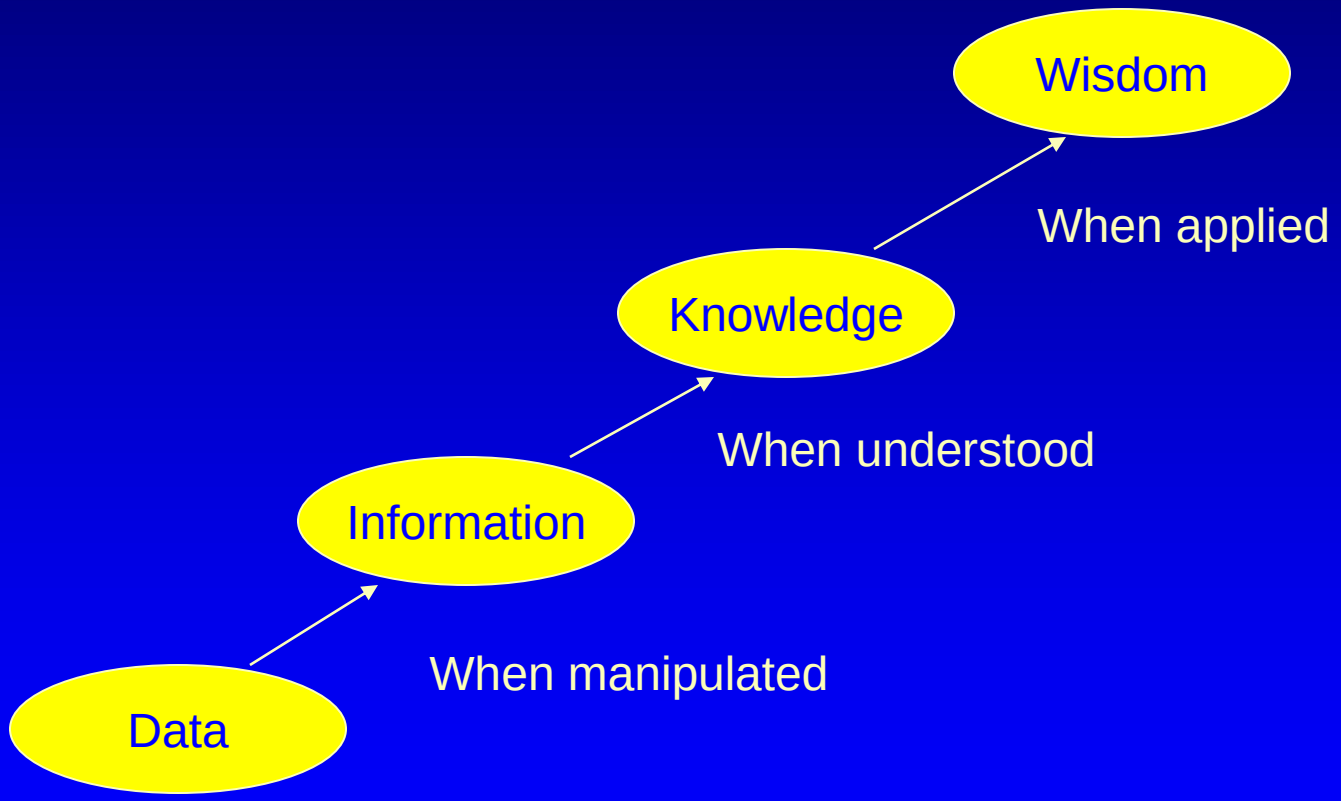
Overview

- Data, Information and Knowledge
- Classifying Knowledge
- Knowledge and Learning Process
  - Knowledge Acquisition, sharing and utilization
- Knowledge Management Systems and Existing Technologies
- Business and Knowledge

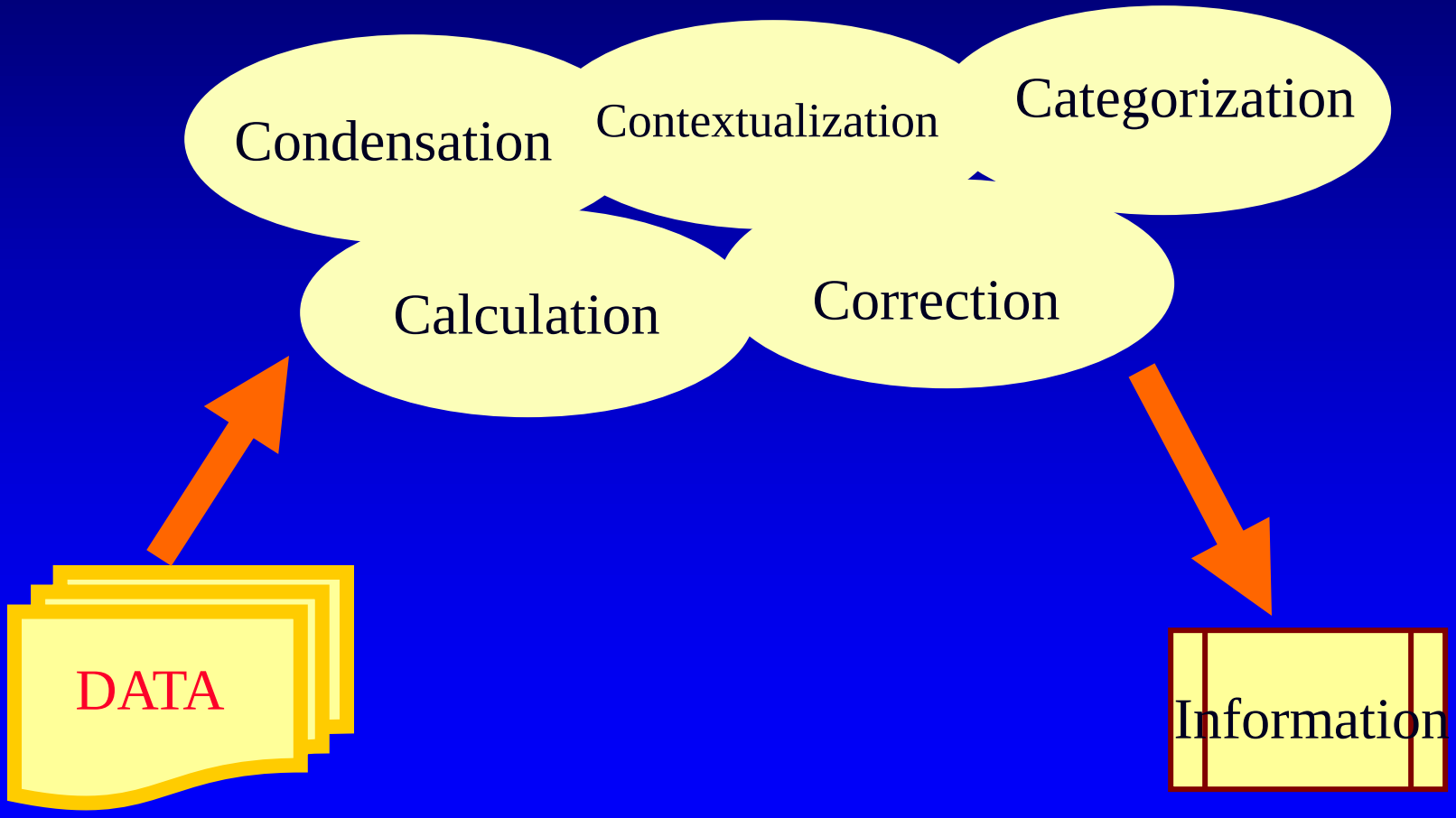
Data to Knowledge to Wisdom



Data to Knowledge

- **DATA** – Information in raw or unorganized form (such as alphabets, numbers, or symbols) that refer to, or represent, conditions, ideas, or objects. (data has no meaning)
- **INFORMATION** – Information can be considered as an aggregation of data (processed data) which helps decision making easier (information has meaning)
- **KNOWLEDGE** – Body of understanding and skills that is mentally constructed by people.
- **WISDOM** – Best use of knowledge.

5 Cs that differentiate data from information



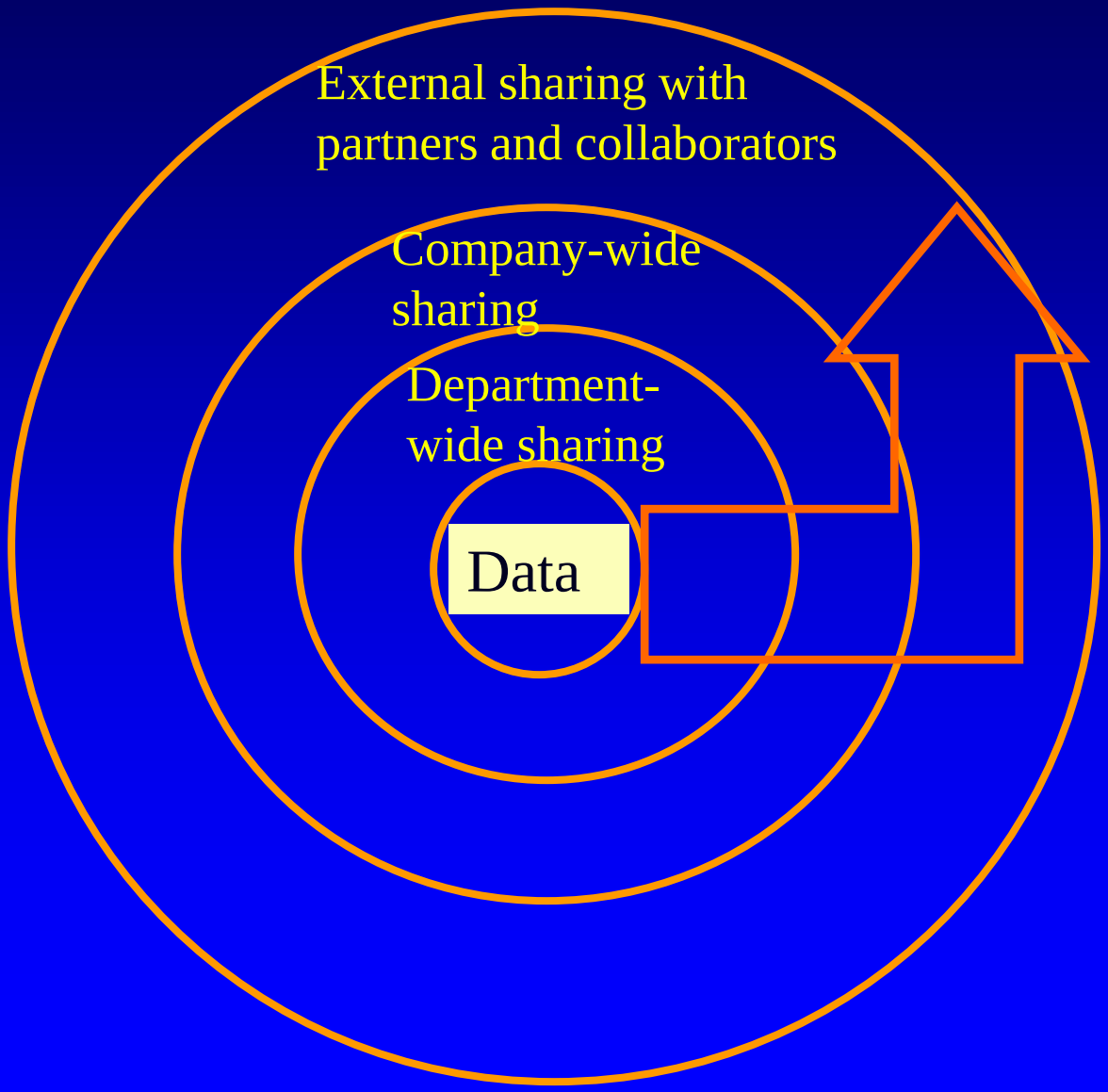
Devenport 1998

Adding meaning to data

Addition to Data	Result
Condensed	Data is summarized in more concise form and unnecessary depth is eliminated
Contextualized	We know why the data is collected
Calculated	Analyzed data, similar to condensation data
Categorized	The unit of analysis is known
Corrected	Errors have been removed, missing “data holes” have been accounted for.

Devenport 1998

Sharing Data



Categories of Knowledge

- Explicit Knowledge: component of knowledge that can be codified and transmitted in a systematic and formal language, documents, databases, webs, emails etc.

- Tacit Knowledge: component of knowledge that is difficult to formalize, record or articulate, it is stored in the heads of people. The tacit component is mainly developed through a process of trial and error encountered in practice.

Explicit and Tacit knowledge

Documented information that can facilitate action.

Know-how & learning embedded within the minds people.

Explicit knowledge

- **Formal or codified**
- **Documents: reports, policy manuals, white papers, standard procedures**
- **Databases**
- **Books, magazines, journals (library)**

Tacit knowledge

- **Informal and uncodified**
- **Values, perspectives & culture**
- **Knowledge in heads**
- **Memories of staff, suppliers and vendors**

Knowledge informs decisions and actions.

Sources: Polanyi, M. (1967). *The tacit dimension*. Leonard, D. & Sensiper, S. (1998). The Role of Tacit Knowledge in Group Innovation. *California Management Review*.

Types of knowledge

- Explicit and Tacit interact in these types:
  - Externalized knowledge
  - Multilocational knowledge
  - Migratory knowledge

Externalized

- Knowledge is complex and initially tacit can be externalized and embedded in a company's product and processes
- Cognitive dimensions: beliefs, values, schemas etc.,
- Cognitive component should be extracted to retain as the captured explicit knowledge.

Multilocational

- Knowledge can exist both within and outside the organization
- Knowledge creation convert the tacit knowledge into a form of explicit knowledge
- KM adds value by leveraging the know-how & experience within and outside organization

Migratory

- Knowledge is independent of its owner or creator
- When knowledge become more and more, codification increases its capacity to move
- Codification implies capture of knowledge
- Ability to transfer knowledge from one person to another or organization to another without losing its context and meaning

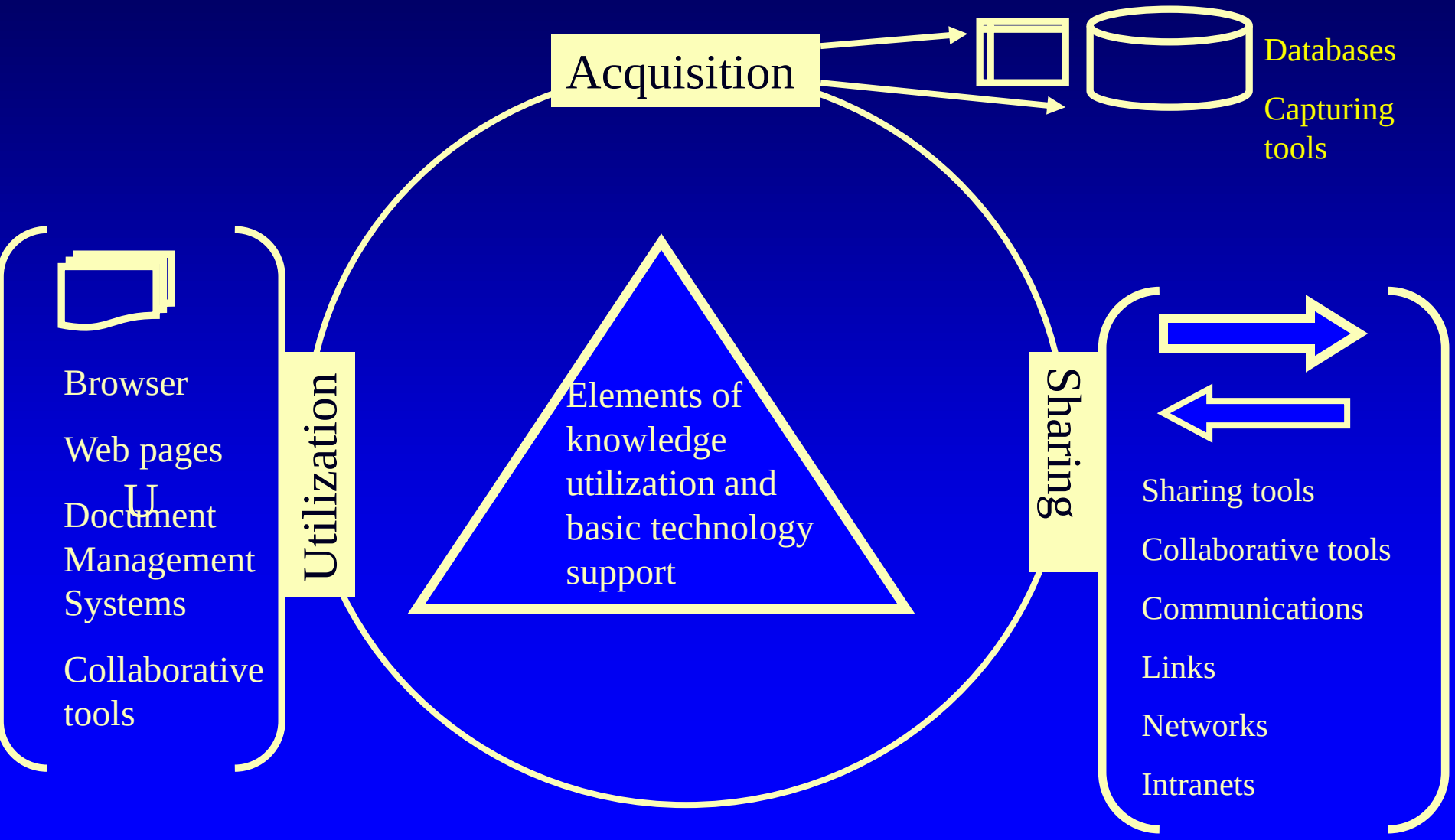
Component of Knowledge

- Intuition (insight)
- Judgment
- Experimental knowledge
- Values, Assumptions and Beliefs
- Intelligence

Knowledge and Learning Process

- Three basic steps that can further expanded
  - Knowledge acquisition
  - Knowledge sharing
  - Knowledge utilization

Basic Elements



Knowledge Acquisition

- Not Information acquisition
- Process of development and creation of insights, skills and relationships
  - Example- Stock broker sees the market trends
- Focus of IT components should be on those lines
  - Data capture tools with filtering abilities, intelligent databases, etc.

Knowledge Sharing

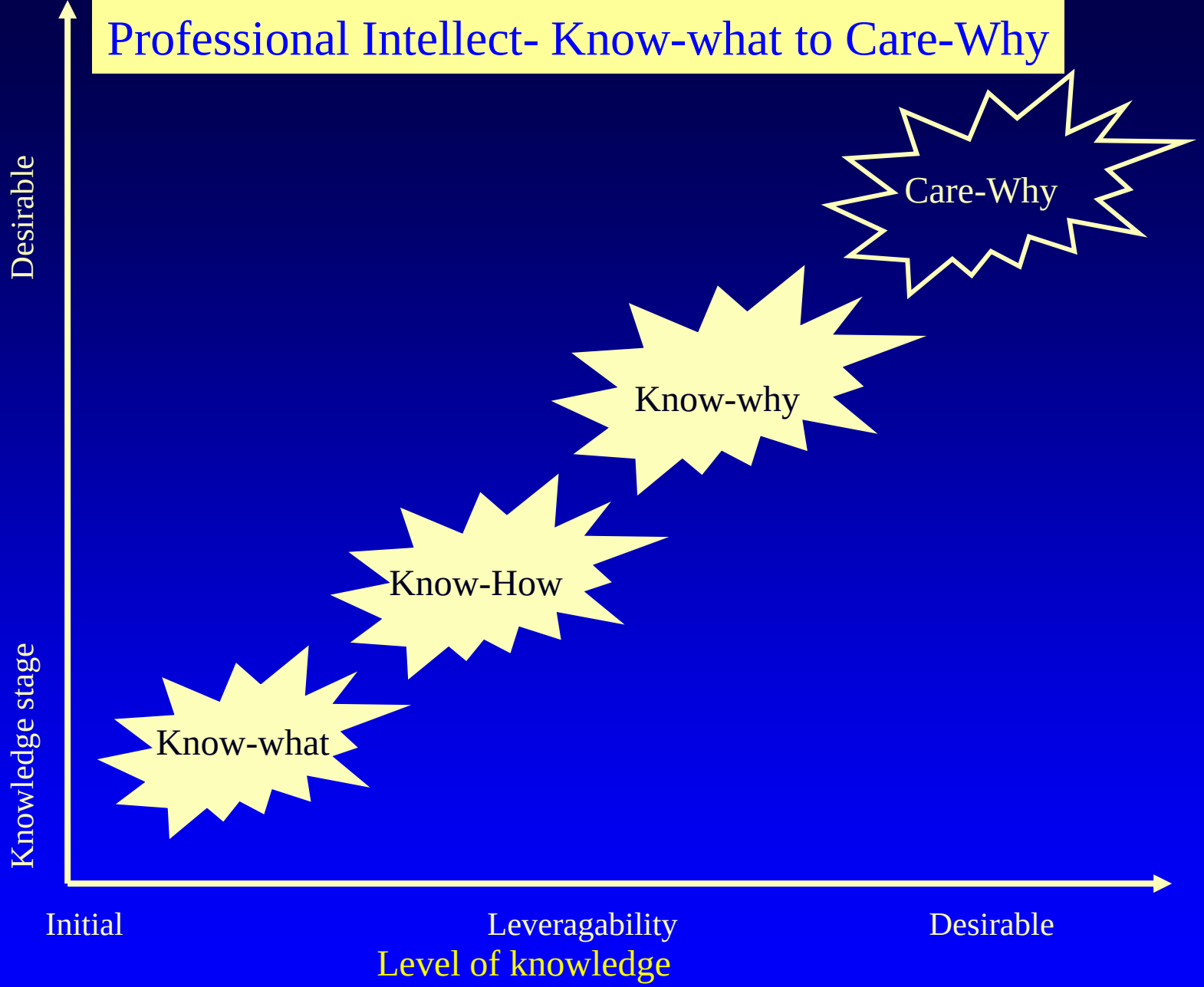
- Disseminating and making available knowledge
- Collaborative problem solving, conversations and teamwork generate a significant knowledge assets
- Example: an expert system that provides support by answering tech support for a call at the help desk

Knowledge Utilization

- Knowledge utilization happens when learning is integrated
- Knowledge available throughout the company can be generalized and applied
- Knowledge sharing and utilization happens together

Four levels of knowledge

Professional Intellect- Know-what to Care-Why



(Brian Quinn –Harvard Business Review Article -1996)

Know-what and Know-how

- Know-what:
  - Represents cognitive knowledge
  - Essential but inefficient for competing
  - An analogy: the knowledge of a graduate when graduating. He knows what to do but has never done in the real life.
- Know-how:
  - Ability to translate bookish knowledge into real world results
  - Is developed through repeated exposure to real world complex problem
  - An analogy: Use marketing knowledge for advertising

Know-why

- Deep knowledge of the complex sludge of cause-and-effect relationships
- Enables individual to create extraordinary leverage by using knowledge
- Enables individual ability to deal with unknown and unseen situations
- An analogy: a stockbroker who intuitively knows just when to sell and buy
- *Knowledge economy demands more than know-how.*
- *To move beyond workers above know-how level, KM system should support for extensive discussion and conversation*

Care-why

- Represent self-motivated creativity that exists in a company
- Less support from KM Systems
- Reason for highly motivated, creative and energetic groups and companies outperform larger corporation with more resources
- Exist in the company culture

Business and Knowledge

- **Companies learn to learn**:

  Knowledge is produced when people work together. Managing organization's tacit knowledge is the critical survival factor.

- **Knowledge friendly companies**:

  Companies which know that their knowledge can be the only asset form for a competitive advantage

  - Leveraged core competencies
  - Continuous improvements of value added product/services
  - Ability to fundamentally refresh

Sharing knowledge: Enablers and Impediments

Enablers	Impediments (barriers)
High level of trust	Fear and suspicion
Rewards for sharing	Unintentionally rewarded for hoarding
Team based collaborative work	Individual effort without recognition and reward
Group accountability and rewards	Employee-owner interest conflicts
Open to outside ideas	Too busy to share
Localized decision making	Centralized top-down decision making

Summary

- There are 2 types of knowledge: Explicit and Tacit
- Managing knowledge effectively can produce desirable results.
- Beyond know-how, toward care-why
- Five Cs: condensation, contextualization, correction, categorization and correction