

Chapter 7:

INFORMATION,KNOWLEDGE,BUSINESS INTELLIGENCE

Introduction

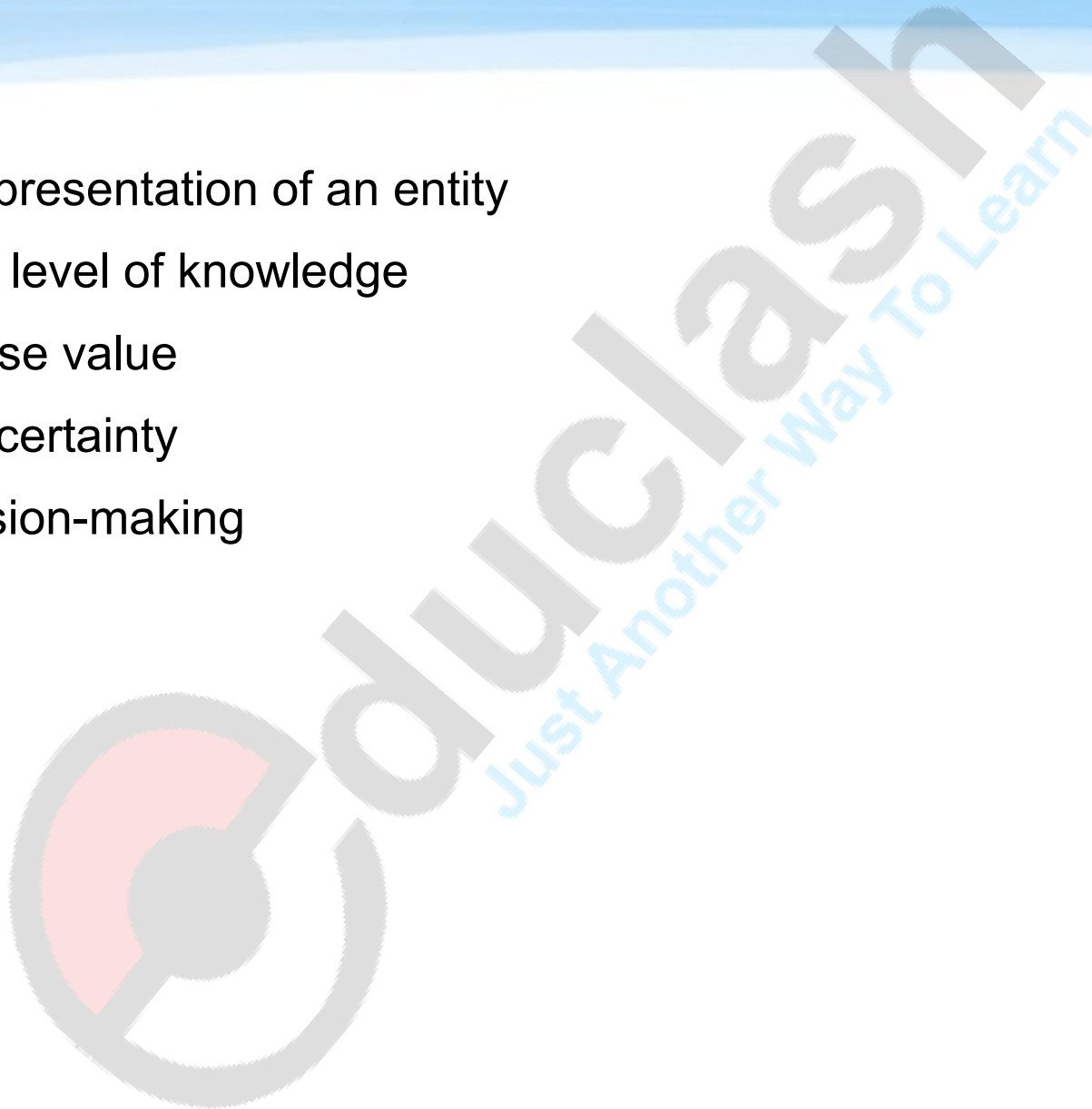
- Differentiate between data, information and knowledge
- Effective Information presentation
- Quality of information
- Classes of Information
- Application of value concept to information
- Value of Additional information
- Human as information processes
- Differentiate between tactical and explicit knowledge

Information Concepts

- Information mean process on data
- Data is raw material and information is finished goods
- Information has a value in decision making
- Information brings clarity and creates an intelligent human response in mind
- Information is a data that has been processed into a form that is meaningful to the recipient
- Information is a real value

Characteristics of Information

- Improves representation of an entity
- Updates the level of knowledge
- Has a surprise value
- Reduces uncertainty
- Aids in decision-making



Characteristics of Information

- **Improves representation of an entity:-**

Data is combination of meaningful and non meaningful values where information is always subject oriented and it has created for meaningful purpose so it is effective data representation tool.

- **Update level of knowledge:-**

Information is useful to update knowledge of decision maker by providing complete base in which decision maker will take vital decision with use of those information

- **Information has a surprise value:**

Information is useful with some meaningful purpose with this it can contain surprise value which is useful in other projects and other departments in organizations

Characteristics of Information

- **Reduces uncertainty:-**

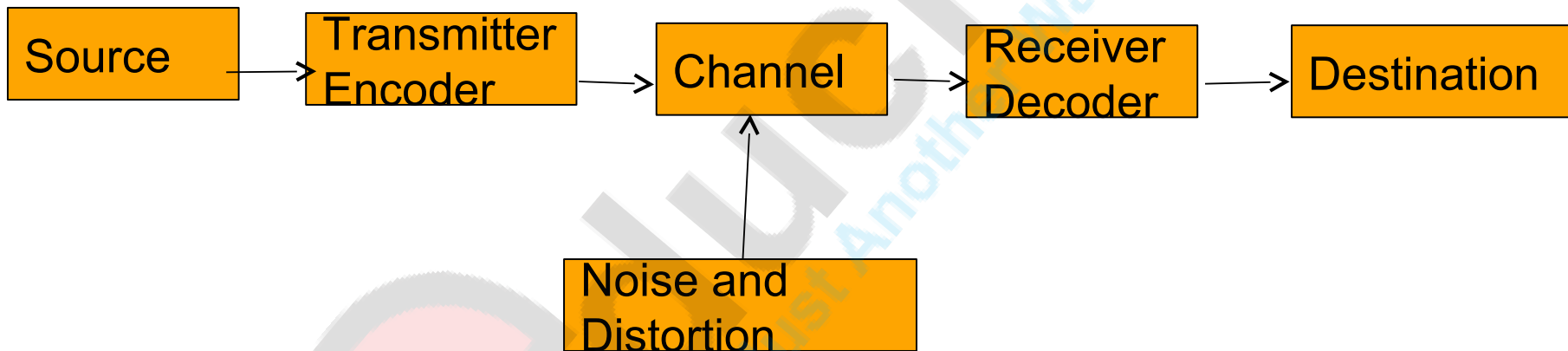
Information reduces uncertainty by providing complete overview of system and providing effective platform to decision maker in which decision maker will make vital decision.

- **Aids in Decision-Making:-**

With this concept information provides something extra with knowledge and subject oriented description which is helpful to decision maker.

Conceptual Model of Communication

- Whether an entity is data or information it must be transferred through communication from source to destination without loss of content. With the use of general model content travels from source to destination.



Information Presentation

- It is an art which is use to analytically transmitted value from data to information
- Degree of communication is effected in information presentation
- One of the method is Information Summarization
- Generally it has done in tabular format
- For Example

Key For Summarization	Focus on Information	Operations
Management Position	Responsibility	GM, Divisional Head of Marketing, Materials
Mgmt function levels in the org selective on condition	Performance, Goals, Target	Production Target, Manager's performance evaluations

Information Presentation

- Another method is effective communication to prevent this one should avoid misuse of information. Here some of methods into beloved table:

Method	Reason	Example
Delayed delivery of information	A possibility of immediate action reduced. It will have knowledge value.	Sales report or copy of invoice of sales representative
Change format and content of report	Provide only that information which is needed	Sales report to operation mgmt, Sales report to top mgmt
Superstition and filtering of information	Avoid risk and achieve goal	Price, cost information
Suppress detail and reference of data and information	Make it difficult to collect for others and secure them	Stastical report with no references
Truncated presentation	Make it difficult to read and secure them	Production details

Attributes of information

Attribute	Explanation
The accuracy in representation	It depends on situation and degree of precision will decide accuracy in information
The form of presentation	Format should be either numeric or graphical, summarized or detailed, printed or displayed in short it should be proper.
The frequency of reporting	Information should be proper and updated
The scope of reporting	The coverage of information in terms of entities, area and range will be in terms of decision maker wants.
The scope of collection	Internal or external according to org's structure
The time scale	Related with past, current and future in short entire time oriented
The relevance to decision making	Depend on situation and relevance to decision making
Complete for decision making	Information should be completed according to decision making aspects.
The timeliness of reporting	Information should focus on time late information can not acceptable for organization

Information: A quality product

- Information is quality product mean it should be error free and helpful to decision maker
- Reason for occurring errors in information are
 - An incorrect data measurement
 - An incorrect collection method
 - Failure of data processing procedure
 - Loss of data
 - Incompleteness of data
 - Poor application of data validation
 - Poor data control systems
 - A deliberate falsification

Information: A quality product

- Points which is useful to maintain quality of information
 - Parameters impacting quality
 - Impartiality
 - Validity
 - Reliability
 - Consistency
 - Age

Parameters impacting quality

- Impartiality:-

It has no bias and has been collected without any destroyed view of situation and data should be collected with some motive.

- Validity:-

It is related with purpose of information. If information is able to fulfill the purpose of decision then it is consider as a valid information

- Reliability:-

It is connected to the representation and what the accuracy of described data and it is based on analysis of system

Parameters impacting quality

- Consistency:

Information should follow certain standard regarding consistency and format in short the flow of information should be subject oriented and consistent

- Age:-

Age should be low or information age not as old as that it becomes an unuseful product in short information should be updated format.

Classification of Information

- According to Prof John Dearden of Harvard university information is classified of following ways:
 - Action versus No Action information
 - Recurring Versus Non Recurring Information
 - Internal Versus External information
 - Planning Information
 - Control Information
 - Knowledge

Classification of Information

- Action Versus No-Action Information:

Example of action information is Maintain a stock ledger and example of no action information is stock balances

- Recurring versus non recurring information:

The information generated at regular intervals is a recurring information for example monthly sales report.

- Internal versus External information:

The information which contain internal part of organization is internal for example schedule of employee

The information which contain external part is called external information for example government records etc

Classification of Information

- Planning information:-

Information which is useful for planning is called planning information the time standard, the operational standards etc

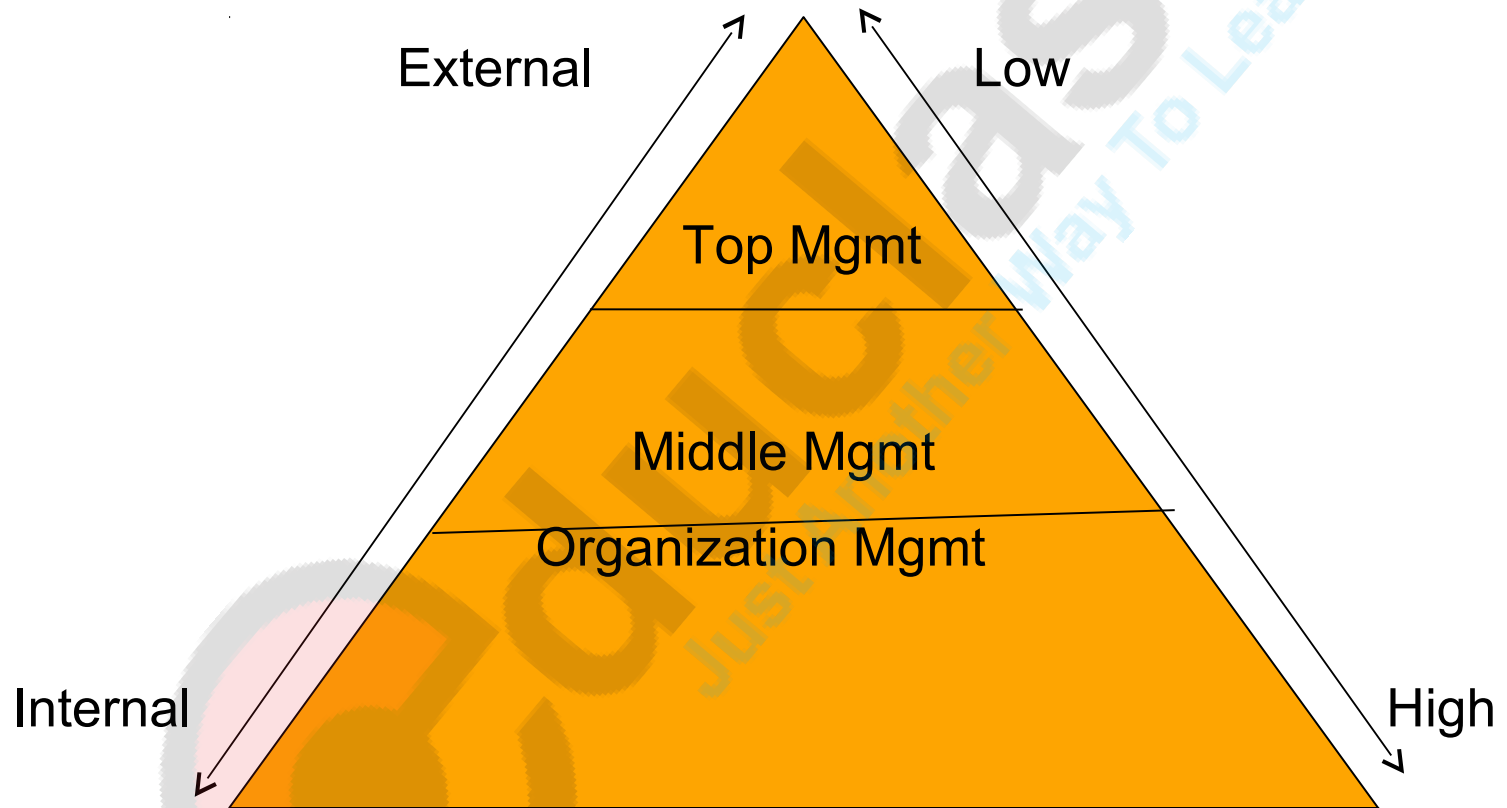
- Control Information:

The information reporting through a feedback mechanism is called the control information

- Knowledge:-

A collection of information through the library reports and the research studies build a knowledge base as a source for decision-making.

Organization and Information



Methods of Data and Information Collection

- Observation
- Experiment
- Survey
- Subjective Estimation
- Transaction processing purchased from outside
- Publications
- Government Agencies

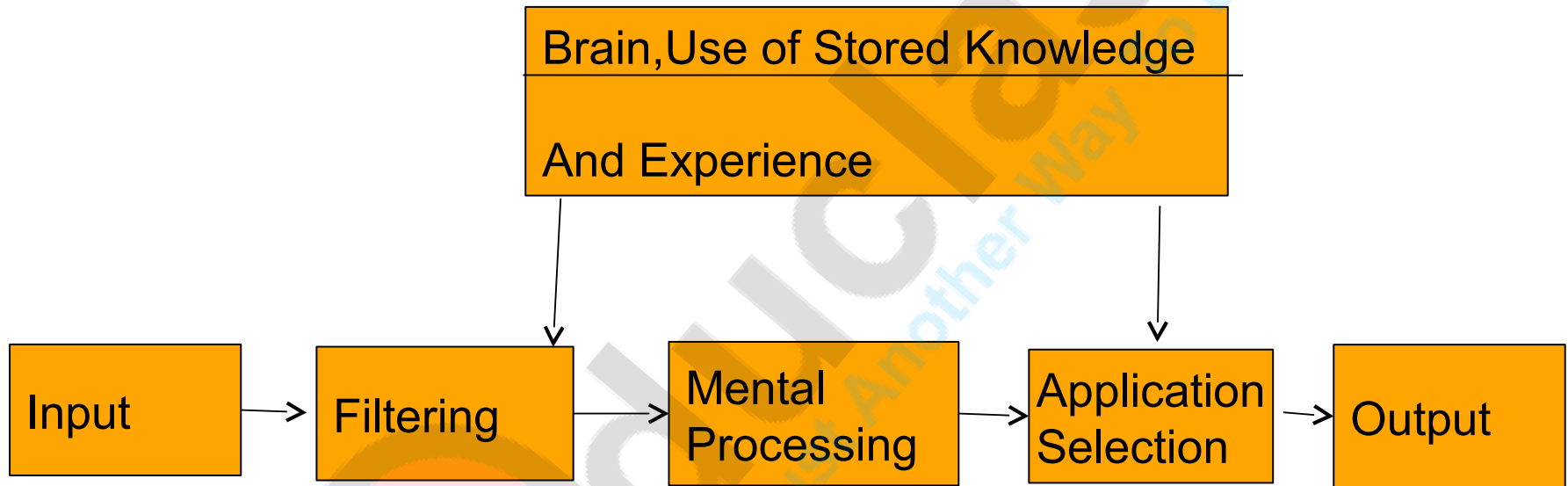
Value of the Information

- The information has a perceived value in terms of decision making
- Value should be wiped out uncertainty in decision making
- Value should be count using following formula
- $VPI = (V2 - V1) - (C2 - C1)$
- Where V is value of information and C is cost of obtaining information
- V1 and C1 is related with one set of information and V2 and C2 is related with new set of information , VPI is value per information
- This formula is useful to count value of information which includes the cost factors so it provides the perfect idea to count information
- It is useful tool for manager to make decision regarding use of this information

General Model of Human as Information Processor

- A Manager generally use eyes, ears to pick up information
- Information should process using filtering method
- The filtering process generally blocks the unwanted or inconsistent data or the data which does not match the frame of references
- Filtering is one kind of error correction process which applies on information
- Filtering is based on manager's experience, Knowledge, Skills, Choice, Amount of urgency, Confidence in particular method of decision making etc
- General model is as given below

General Model of Human as Information Processor



Manager's Individual Differences

- The points which effects while collecting information regarding manager's individual differences are
 - Internal and External situation of Firm
 - Personal dogmatism
 - Risk propensity
 - Tolerance for ambiguity
 - Manipulative Intelligence
 - Experience in Decision Making
 - Knowledge of Task, tool and Technology
 - The management level from lower to higher

Summary Of information Concepts and their implications

- Understanding of information concepts is very important and relevant to the system designer and information user the concepts are
 - Filtering
 - Simon Model and Applications
 - Codes and representation
 - Highlighting
 - Stastical Analysis
 - Format
 - Referencing and Adjustments
 - Cognitive style
 - Learning theory
 - Feedback Loop
 - Perceived Value of Data
 - Information Absorption
 - Individual Differences

Summary Of information Concepts

- Filtering:-

This process take place after information collection this is generally correction of errors in information

- Simon model and its application:-

The designer should attempt to provide that clearly defines the problem space and decision should provide solution of problem

- Codes and representation:-

The system designer should evolves such coding system that is easy for user and easy for manager to understand.

Summary Of information Concepts

- Highlighting:-

The designer should provide information such a way that a significant differences between standard and performance, The budgets and actual are highlighted

- * Stastical analysis:-

Information should be meaningful best way is provide in stastical format so decision can easily been concluded from them

- Format:-

Format of information should have completed and easy to understand by user and it should have consistent.

- Referencing and adjustments:-

Designer should able to generate information with references to other system and adjust information according to others

Summary Of information Concepts

- Cognitive Style:-

Each user have their own style to resolving information so styles of representing information should be easy to implement and useful to other users too.

- Learning Theory:-

The designer will able to ready to learn something new which is useful to maintain appropriate information and information has not overload with bunches of data and that thing is known by him

- Feedback Loop:-

While providing information designer will make a feedback loop where users will give their suggestions that can be useful to correction and increase quality of system.

Summary Of information Concepts

- Perceived value of data:-

Some data in information is not useful for that operation but according to its perceived value these are kept in information so this is perceived value which is useful for future.

- Information Absorption:-

Designer should provide only those information which user will grasp and able to understand

- Individual Differences:-

Information will always different according to different human being and it is highly effected on decision.

Knowledge And Knowledge Management Systems

- Knowledge is a set of information which provides capability to understand different situations , enables to anticipate implications and judge their effects, suggest ways or clues to handle situations
- Knowledge is provide a complete platform to handle complex situation and it has capability to provide complete solution to decision maker.
- Knowledge is best illustrated and applicable to resolve complex problem situations.
- It has different from data and information
- Data is raw material where information is process on data
- Knowledge is analyzed information and generate some conclusive thing which is useful for future.

Knowledge And Knowledge Management Systems

- For Example:

- Collect rainfall record on daily bases is data
- This data is processed by year and month , it is an information
- When this information is analyzed using analytical tools, it revels rainfall pattern. This pattern is knowledge
- Generally knowledge is useful for future and improves skill, Performance of user.
- It has three components
- First is visualization of strategic option to handle complex situation
- Second is anticipative and assessment of result
- Third is provide a complete base for decision maker.

Types of Knowledge

- It has three types
 - First is **explicit knowledge** which can be codified or modeled for example software product and packaging
 - Second is **tacit knowledge** which can not be codified it is intangible knowledge for example performance review, Market value of org.
 - Third is **intellectual knowledge** which is could be tacit or explicit generally this type of knowledge can be count using first two knowledge
 - Intellectual knowledge is exact analyzed knowledge from information
 - For organization point of view to manage knowledge is the key resource because it is important with us it the business economy is turn into knowledge economy.

Knowledge Management

- It is the systematic and explicit management of knowledge related activities.
- KM is comprehensive towards focusing on three perspectives of business operational, tactical and strategic
- KM dispels some myths which must be mentioned for correction
 - KM initiatives and activities lead to more work. Instead improved knowledge and usage.
 - KM initiatives and activities is an additional function. Instead it is an extension to existing technology driven information management function.
 - People are often afraid to share their knowledge.

Driving Forces behind KM

- The emergence of KM is a result of many forces in today's world KM is not an alternative or luxury, But it is a necessity due to demand of customer centric business initiatives
- KM is steady and customer centric process.
- It has 2 driving Forces
- First is External forces which focuses on outer world
- Second is internal forces which focuses on inner thing of organization

Driving Forces behind KM

- External Forces:

Business organizations perform environments that they can not control and success depends on how they deal with these forces and still grow. The issues related with external forces are as under

- Globalization of Business
- Demanding Customers
- Innovative Competitors
- Resourceful Vendors

Driving Forces behind KM

- Internal forces:

Like forces in external environments this impact with internal part of organization. To control negative impact of these forces knowledge initiatives are necessary the points which are effected with this are as given below

- Bottlenecks in effectiveness
- Technological capabilities
- Understanding of human cognitive functions

Key Aspects of KM

- There are four key aspects of KM which are importance

1) Accelerating knowledge creation and application:-

Knowledge is not static it is completely change according to situation so knowledge application is completely updated format and up to date.

2) Converting tacit knowledge into explicit knowledge:-

KM converts tacit into explicit by implies methods and processed which is beneficial to their future usage.

3) Build Knowledge Assets:-

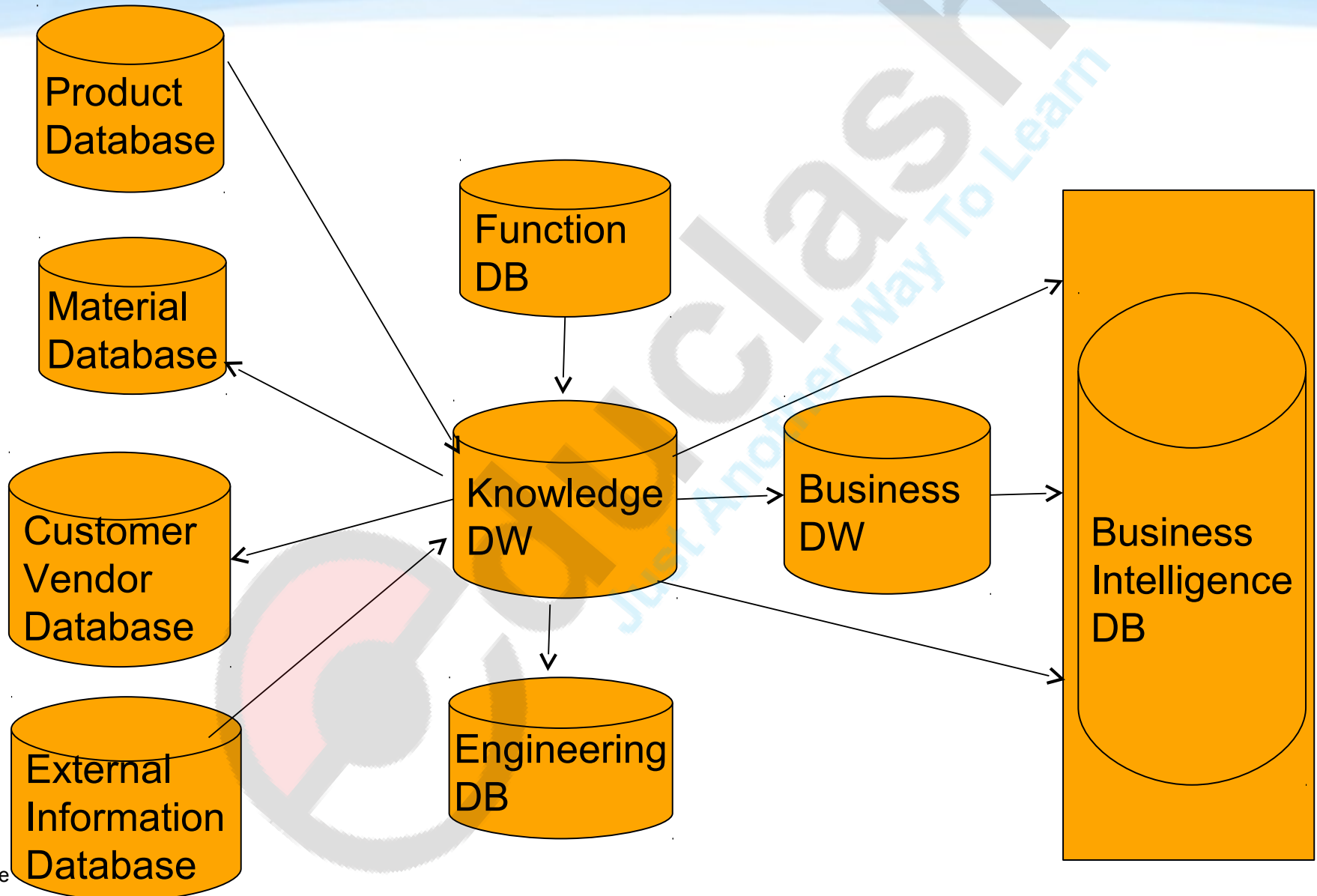
Some of the knowledge is strategically important so need to protect it with various types of processes on them.

4) In summary KM involves knowledge generation through creation and acquisition threw integration , pooling, Storage and indentification.

Business Intelligence

- BI is a term that refers to the sum total of gathering and processing data, Building rich and relevant information and maintain it live and up to date.
- BI is used for timely, Effective decisions and better plan for future.
- BI is an outcome of turning a raw data into intelligent information by analyzing and re-arranging data according to relationship between data item and actual subject oriented analysis.
- BI Is depended on following things
 - Technology and Software infrastructure
 - Databases, Data Warehouses.
 - Develops and maintains knowledge databases for all core functions and business.

Data, Information and Knowledge, Business intelligence



MIS and Information and Knowledge

- The main goal of MIS to provide information which has surprise value and reduces the uncertainty to help decision making process.
- MIS should simultaneously build the knowledge base in the org by processing data obtained from different sources in different ways.
- Effective communication model provide a special way to transfer data from source to destination with help of noise and distortion
- The information is quality produce for org.
- MIS provide specific attention to quality parameters
- MIS will provide different kinds of information with help of this decision maker can take useful decisions..
- Decision maker is human so there is chance of errors but MIS help them to reduced error and also guide them towards the right way.

MIS and Information and Knowledge

- The MIS design should be such that it meets need of total organization.
- The information may be miscued if it falls if it falls into wrong hands, The mis design should have features of filtering, blocking, suppressions and delayed delivery.
- Modern Mis not only should provide information but also support management by providing knowledge necessary at all levels for critical decisions.
- KMS is now a part of MIS suite.
- Knowledge is a result of putting different information sets together and analyzing them and viewing them in particular manner.
- Data processing, Transaction processing, Application processing systsems will give different information sets.
- First will give and explicit knowledge. Further application of the explicit knowledge over a period to solve the problems creates a tacit