

**Subject: Knowledge Management**  
**Code: BCA5001**  
**Unit-I**

**What is knowledge management?**

Knowledge management (KM) is the process of identifying, organizing, and storing and information within an organization. When knowledge is not easily accessible within an organization, it can be incredibly costly to a business as valuable time is spent seeking out relevant information versus completing outcome-focused tasks.

A knowledge management system (KMS) harnesses the collective knowledge of the organization, leading to better operational efficiencies. These systems are supported by the use of a knowledge base. They are usually critical to successful knowledge management, providing a centralized place to store information and access it readily.

Companies with a knowledge management strategy achieve business outcomes more quickly as increased organizational learning and collaboration among team members facilitates faster decision-making across the business. It also streamlines more organizational processes, such as training and on-boarding, leading to reports of higher employee satisfaction and retention.

**Types of knowledge**

The definition of knowledge management also includes three types of knowledge—tacit, implicit, and explicit knowledge. These types of knowledge are largely distinguished by the codification of the information.

**Tacit knowledge:** This type of knowledge is typically acquired through experience, and it is intuitively understood. As a result, it is challenging to articulate and codify, making it difficult to transfer this information to other individuals. Examples of tacit knowledge can include language, facial recognition, or leadership skills.

**Implicit knowledge:** While some literature equivocates implicit knowledge to tacit knowledge, some academics break out this type separately, expressing that the definition of tacit knowledge is more nuanced. While tacit knowledge is difficult to codify, implicit knowledge does not necessarily have this problem. Instead, implicit information has yet to be documented. It tends to exist within processes, and it can be referred to as “know-how” knowledge.

**Explicit knowledge:** Explicit knowledge is captured within various document types such as manuals, reports, and guides, allowing organizations to easily share knowledge across teams. This type of knowledge is perhaps the most well-known and examples of it include knowledge assets such as databases, white papers, and case studies. This form of knowledge is important to

retain intellectual capital within an organization as well as facilitate successful knowledge transfer to new employees.

## **Knowledge management process and tools**

### **Knowledge management process**

While some academics summarize the knowledge management process as involving knowledge acquisition, creation, refinement, storage, transfer, sharing and utilization. This process can be synthesized this a little further. Effective knowledge management system typically goes through three main steps:

**Knowledge Creation:** During this step, organizations identify and document any existing or new knowledge that they want to circulate across the company.

**Knowledge Storage:** During this stage, an information technology system is typically used to host organizational knowledge for distribution. Information may need to be formatted in a particular way to meet the requirements of that repository.

**Knowledge Sharing:** In this final stage, processes to share knowledge are communicated broadly across the organization. The rate in which information spreads will vary depending on organizational culture. Companies that encourage and reward this behavior will certainly have a competitive advantage over other ones in their industry.

### **Knowledge management tools**

There are number tools that organizations utilize to reap the benefits of knowledge management. Examples of knowledge management systems can include:

**Document management systems** act as a centralized storage system for digital documents, such as PDFs, images, and word processing files. These systems enhance employee workflows by enabling easy retrieval of documents, such as lessons learned.

**Content management systems (CMS)** are applications which manage web content where end users can edit and publish content. These are commonly confused with document management systems, but CMSs can support other media types, such as audio and video.

**Intranets** are private networks that exist solely within an organization, which enable the sharing of enablement, tools, and processes within internal stakeholders. While they can be time-consuming and costly to maintain, they provide a number of groupware services, such as internal directories and search, which facilitate collaboration.

**Wikis** can be a popular knowledge management tool given its ease of use. They make it easy to upload and edit information, but this ease can lead to concerns about misinformation as workers may update them with incorrect or outdated information.

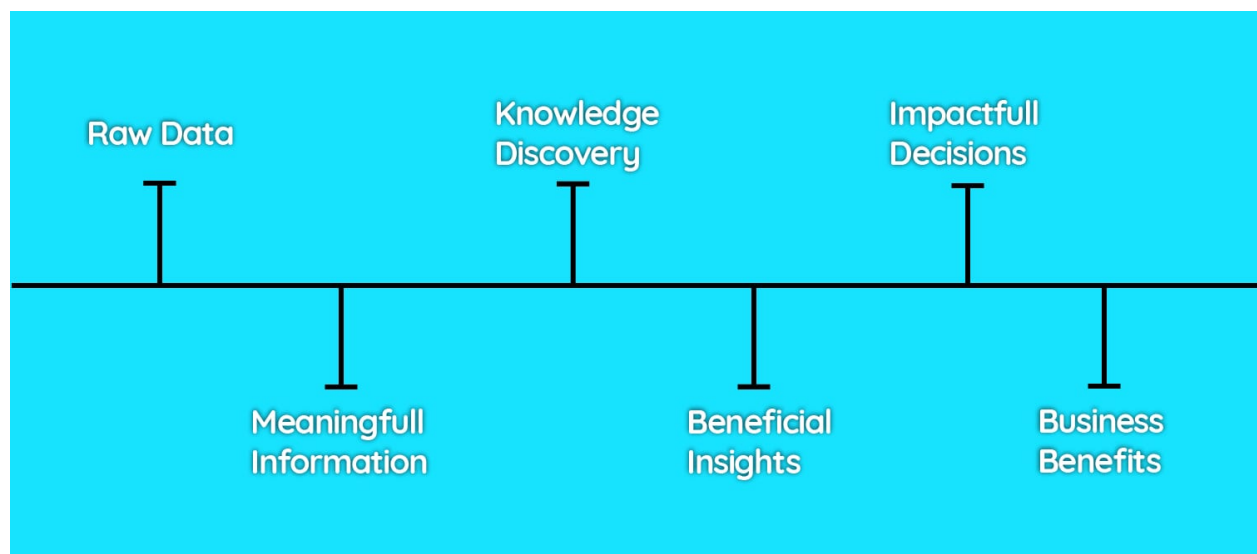
**Data warehouses** aggregate data from different sources into a single, central, consistent data store to support data analysis, data mining, artificial intelligence (AI), and machine learning. Data is extracted from these repositories so that companies can derive insights, empowering employees to make data-driven decisions.

## What is Business Intelligence?

Business Intelligence is the talk of a new changing and growing world that can be defined as a set of concepts and methodologies to improve decision-making in business through the use of facts and fact-based systems. The Goal of Business Intelligence is to improve decision-making in business ideas and analysis. Business Intelligence is not just a concept it's a group of concepts and methodologies. Business Intelligence uses analytics and gut feelings for making decisions.

## Process Used in Business Intelligence:

BI(Business Intelligence) uses a set of processes, technologies, and tools (such as Informatica/IBM) to transform raw data into meaningful information and then transform information to provide knowledge. Then afterward some beneficial insights can be extracted manually and by some software then the decision-makers can make an impactful decision on the basis of insights.



To sound short and clear – Business Intelligence about provides accurate information in the right and ethical format to the decision-makers of the organization. Some Important features of Business Intelligence are:

- Fact-based decision making.
- 360 degrees perspective on your business.

- Virtual team members are on the same page.
- Measurement for creating KPI (Key Performance Indicators) on the basis of historic data fed into the system.
- Identify the benchmark and then set the benchmarks for different processes.
- Business Intelligence systems can use to identify market trends and also to spot business problems that need to be identified and solved.
- Business Intelligence helps in data visualization will increase the quality of data and then also increases the quality of decision making.
- Business Intelligence systems can be used by large enterprises, and organizations along with Small and Medium Enterprises, because it is quite affordable.

### **Types of Users of Business Intelligence:**

- **Analyst (Data Analyst or Business Analyst):** They are the statistician of the company, they used BI on the basis of historical data priorly stored in the system.
- **Head or Manager of the Company:** Head of the company uses Business Intelligence used to increase the profitability of their company by increasing the efficiency in their decisions on the basis of all the knowledge they discovered.
- **IT Engineer:** For his company.
- **Small Business Owners:** Can be used by a small businessman because it is quite affordable too.
- **Government Officials:** In the decision-making of the government.

### **Types of Decisions Supported by Business Intelligence:**

- **Strategic Level:** The strategic level is the level where the Heads of the company decide the strategies of any business.
- **Tactical Level:** Once the strategy is made though for handling all the details and matters have a tactical level where all the technologies and methodologies come under one umbrella. This level is further responsible for continuously updating the data.
- **Operational Level:** Operation decisions are made at this level. Operational decisions help in operating the system.

### **Applications of Business Intelligence:**

- In Decision Making of the company by decision-makers of the organizations.
- In Data Mining while extracting knowledge.
- In Operational Analytics and operational management.
- In Predictive Analytics.
- In Prescriptive Analytics.
- Making Structured data from unstructured data.
- In Decision Support System.
- In Executive Information System (EIS).

## Business Intelligence Tools and Software

1. **Tableau:** A business intelligence and data visualization application that enables users to connect to different data sources, build interactive dashboards, and share findings with others.
2. **Microsoft Power BI:** A cloud-based business intelligence program that enables users to connect to a variety of data sources, produce visualizations, and communicate findings.
3. QlikView is a business intelligence and data visualization platform that enables users to build interactive dashboards and examine data in novel ways.
4. Data visualization, reporting, and analytics tools are all included in SAP BusinessObjects, a complete business intelligence suite.
5. **IBM Cognos:** A tool for performance management and corporate intelligence that enables users to build reports, scorecards, and dashboards.
6. Data visualization, reporting, and analytics technologies are all part of the full business intelligence suite known as Oracle Business Intelligence.
7. Create dynamic dashboards and reports with MicroStrategy, a business intelligence and data visualization tool.
8. Data visualization, reporting, and analytics tools are all part of the full business intelligence suite known as SAS Business Intelligence.
9. TIBCO Spotfire is a business intelligence and data visualization platform that enables users to build interactive dashboards and investigate data in novel ways.
10. **Looker:** A tool for business intelligence and data visualization that enables users to build interactive dashboards and investigate data in novel ways.

## Advantages of Business Intelligence

1. Decision-making is improved because users have access to real-time data and insights through business intelligence tools. This enables users to base their decisions on correct and current information.
2. **Efficiency gain:** Many manual data analysis operations are automated by business intelligence systems, freeing up time and resources for other tasks.
3. **Better data management:** Business intelligence technologies aid in the administration and organization of data, making it simpler to locate the facts required for decision-making.
4. **Greater visibility:** Business intelligence solutions give users a comprehensive picture of the functioning of the firm, enabling them to spot areas that could use improvement.
5. **A better understanding of customers:** Business intelligence technologies helps firms understand their customers better, enabling them to customize products and services to suit their needs.
6. **Cost savings:** Business intelligence technologies assist firms in locating inefficiencies and cost savings, which boosts revenue.
7. **Better forecasting:** Organizations may evaluate past data and predict future patterns using business intelligence technologies, which enable them to plan more successfully for the future.

8. **Competitive advantage:** By granting access to important data and insights that can guide them in making better decisions, business intelligence technologies provide firms a leg up on their rivals.
9. Collaboration is improved as a result of using business intelligence technologies to disseminate information between teams and departments. This promotes better decision-making and collaboration.
10. **Better Monitoring:** Business intelligence technologies assist firms in tracking important metrics like revenue, customer happiness, and staff performance and in monitoring performance.

### **Disadvantages of Business Intelligence**

1. **Complexity:** The implementation and upkeep of business intelligence systems can be extremely difficult and complicated. This may be a drawback for companies with constrained IT resources.
2. **High costs:** Some businesses find it prohibitively expensive to implement and purchase business intelligence technologies.
3. Business intelligence strongly depends on accurate and current data. The insights produced by business intelligence technologies could not be accurate if the data is inconsistent, erroneous, or incomplete.
4. **Data Security:** Business intelligence systems handle and store a lot of sensitive data, which, if not adequately protected, is susceptible to security breaches.
5. **Dependence on IT:** Because business intelligence solutions frequently rely largely on IT assistance, it may be challenging for enterprises to quickly get the data they require.
6. **Limited scalability:** For firms with huge data volumes, business intelligence solutions may not be able to handle enormous amounts of data.

### **What is a decision-making process?**

A decision-making process is a series of steps taken by an individual to determine the best option or course of action to meet their needs. In a business context, it is a set of steps taken by managers in an enterprise to determine the planned path for business initiatives and to set specific actions in motion. Ideally, business decisions are based on an analysis of objective facts, aided by the use of business intelligence (BI) and analytics tools.

In any business situation there are multiple directions in which to take a strategy or an initiative. The variety of alternatives to weigh -- and the volume of decisions that must be made on an ongoing basis, especially in large organizations -- makes the implementation of an effective decision-making process a crucial element of managing successful business operations.

There are many different decision-making methodologies, but most share at least five steps in common:

- Identify a business problem.
- Seek information about different possible decisions and their likely effect.
- Evaluate the alternatives and choose one of them.
- Implement the decision in business operations.
- Monitor the situation, gather data about the decision's impact and make changes if necessary.

### **Data-driven decision-making**

Traditionally, decisions were made by business managers or corporate executives using their intuitive understanding of the situation at hand. However, intuitive decision-making has several drawbacks. For example, a gut-feel approach makes it hard to justify decisions after the fact and bases enterprise decision-making on the experience and accumulated knowledge of individuals, who can be vulnerable to cognitive biases that lead them to make bad decisions.

That's why businesses today typically take more systematic and data-driven approaches to the decision-making process. This allows managers and executives to use techniques such as cost-benefit analysis and predictive modeling to justify their decisions. It also enables lines of business to build process automation protocols that can be applied to new situations as they arise, removing the need for each one to be handled as a unique decision-making event.

If designed properly, a systematic decision-making process reduces the possibility that the biases and blind spots of individuals will result in sub-optimal decisions. On the other hand, data isn't infallible, which makes observing the business impact of decisions a crucial step in case things go in the wrong direction. The potential for humans to choose the wrong data also highlights the

need for monitoring the analytics and decision-making stages, as opposed to blindly going where the data is pointing.

### **Challenges in the decision-making process**

Balancing data-driven and intuitive approaches to decision-making is a difficult proposition. Managers and executives may be skeptical about relying on data that goes against their intuition in making decisions or feel that their experience and knowledge is being discounted or ignored completely. As a result, they may push back against the findings of BI and analytics tools during the decision-making process.

Getting everyone on board with business decisions can also be a challenge, particularly if the decision-making process isn't transparent and decisions aren't explained well to affected parties in an organization. That calls for the development of a plan for communicating about decisions internally, plus a change management strategy to deal with the effects of decisions on business operations.

Decision-making models can also be used to avoid these various challenges by creating a structured, transparent process.

### **What is a decision-making model?**

A decision-making model is a system or process which individuals can follow or imitate to ensure they make the best choice among various options. A model makes the decision-making process easier by providing guidelines to help businesses reach a beneficial conclusion.

Decision models also make the decision-making process visible and easily communicable for everyone involved, including all managers, stakeholders and employees. They can be used for a wide variety of purposes across departments, businesses and industries, but they are especially useful when selecting software vendors or new tools, choosing new courses of action or when implementing changes that effect large amounts of people.

### **Types of decision-making models**

Common types of decision-making models include:



**Rational models** Rational decision-making is the most popular type of model. It is logical and sequential and focuses on listing as many alternative courses of action as possible. Once all options have been laid out, they can be evaluated to determine which is best. These models often include pros and cons for each choice, with the options listed in the order of their importance.

A rational decision-making model typically includes the following steps:

- Identify the problem or opportunity.
- Establish and weigh decision criteria.
- Collect and organize all related information.
- Analyze the situation.
- Develop a variety of options.
- Assess all options and assign a value to each one.
- Decide which option is best.
- Implement the decision.
- Evaluate the decision.

**Intuitive models** These decision-making models focus on there being no real logic or reason to the decision-making process. Instead, the process is dictated by an inner knowledge -- or intuition -- about what the right option is. However, intuitive models are not solely based on gut feelings. They also look at pattern recognition, similarity recognition and the importance or prominence of the option.

**Recognition primed models** These models are a combination of rational and intuitive decision-making. Its defining element is that the decision-maker only considers one option instead of weighing all of them.

The recognition primed decision-making process involves the following:

- Identifying the problem, including all its characteristics, problem cues, expectations and business goals.
- Thinking through the plan and performing a mental simulation to see if it works and what modifications might be needed.
- If the plan seems satisfactory, then the final decision is made, and the plan is implemented.

In recognition primed models, alternative courses of action are only considered if the original plan does not produce the intended results. The success rate of this model correlates to an individual's experience and expertise.

**Creative models** In this decision-making model, users collect information and insights about the problem and create some initial ideas for solutions. Then, the decision-maker enters an incubation period where they do not actively think about the options. Instead, they allow their unconscious to take over the process and eventually lead them to a realization and answer which they can then test and finalize.

### **When to use decision-making models**

Even when rules and procedures are set up to make business decision-making more systematic, there can still be room for intuition on the part of decision-makers. For example, after gathering data about different alternatives, more than one might seem similarly advantageous, or management might find itself lacking certain information needed to make a decision with full confidence. This is a good use case for incorporating an intuitive decision-making model into the process.

On the other hand, decisions that happen frequently and have clear optimal outcomes benefit from structured rational decision-making models. This approach to business problem-solving uses clearly prescribed steps and, usually, data analytics software to evaluate the available options and arrive at a decision.

Sometimes involving more people in the decision-making process can pay off. This is known as participatory decision-making; in the business world, it involves managers seeking input and

feedback on decisions from the workers they oversee. The participatory approach has the potential advantage of generating many ideas for solving a business problem and also helps to engage employees.

## **Decision management**

Decision management -- also known as enterprise decision management (EDM) or business decision management (BDM) -- is a process or set of processes that aims to improve the decision-making process by using all available information to increase the precision, consistency and agility of decisions. The processes also focus on making good choices by taking known risks and time constraints into consideration.

Decision models and Decision support systems (DSS) are key elements of decision management. Decision management processes also use business rules, business intelligence, continuous improvement, artificial intelligence (AI) and predictive analytics to access the capabilities of big data and meet the needs of modern day user expectations and operational requirements.

Decision management systems treat decisions as reusable assets and introduce technology at decision points to automate the decision-making process. Decisions may be fully automated, or they may be presented as possible choices for a human to select.

Increasingly, organizations who deal with financial services, banking and insurance are integrating decision-making software into their business process systems as well as their customer-facing applications. This approach is especially useful for high-volume decision-making because automating such decisions can enable more efficient, information-based and consistent responses to events.

## **What is GDSS?**

GDSS is the abbreviation for Group Decision Support System. It is a system that supports decision-making and has been designed and structured in such a way so that the members constituting a group can interact with each other to arrive at a particular decision. It provides support for various group decision-making activities such as file sharing, integration of the

individual opinions with that of the group, communication, modelling of group actions and any other action which requires interaction of the group members.

The decision support systems that have been mentioned till now facilitate a single person to take decisions by providing computerised support. These decisions fall into the unstructured or semi-structured category. Most of the decisions that have to be taken in the organisation are generally a group effort rather than taken by a single person.

The main characteristic of the Group Decision Support Systems or GDSS is to support exchange and flow of information and ideas seamlessly between various members of the decision-making group. It also maintains the privacy of the members. There are also many other terms that have been introduced for the use of information technology in decision-making within a group. Some of the popular terms that are in use include Group Support System (GSS), Computer-Supported Co-operative Work (CSCW), computerised collaborative work support and Electronic Meeting System (EMS). Groupware is the term that has been coined for software used in such a scenario.

Thus, a computer-based system is interactive in nature and helps in solving problems that are unstructured in nature when a group of decision makers are working in collaboration with each other.

### **Advantages of GDSS**

#### **1) More Information in Less Time :**

It is possible to gather huge amount of information in a very short time period as GDSS facilitates the members of the team to work parallel.

#### **2) Greater Participation :**

The risks associated with conformity pressure and groupthink is greatly decreased when the members of the group work in a GDSS because the members are able to express their thoughts freely. This is due to the anonymity feature extended by GDSS.

### **3) More Structure :**

In a GDSS environment the discussions are much more concentrated and focused. Irrelevant degradations are greatly reduced.

### **4) Automated Documentation :**

Comments are preserved forever and the system provides the result without any delay. Excellent graphics makes viewing more attractive.

## **Advantages of GDSS**

### **1) Cost :**

A significant amount of cost may be associated with putting up the infrastructure consisting of the room, network connectivity and the software.

### **2) Security :**

This risk arises when the facility for setting up GDSS has been rented. There are chances that information gets leaked to the peers by a low level employee.

### **3) Technical Failure :**

The system must be properly implemented to reduce the risk associated with loss of connectivity and power loss. It is highly dependent on LAN/WAN infrastructure and bandwidth.

### **4) Keyboarding Skills :**

If the members get frustrated they might participate less.

## **5) Training :**

There is variation in the learning curve of the user in various situations.

## **6) Perception of Messages :**

MIS-interpretations may occur in case the members communicate less verbally.

## **Features of GDSS**

### **1) Ease of Use :**

It consists of an interactive interface that makes working with GDSS simple and easy.

### **2) Better Decision Making :**

It provides the conference room setting and various software tools that facilitate users at different locations to make decisions as a group resulting in better decisions.

### **3) Emphasis on Semi-structured and Unstructured Decisions :**

It provides important information that assists middle and higher level management in making semi-structured and unstructured decisions.

### **4) Specific and General Support :**

The facilitator controls the different phases of the group decision support system meeting (idea generation, discussion, voting and vote counting, etc.) what is displayed on the central screen and the type of ranking and voting that takes place, etc. In addition, the facilitator also provides general support to the group and helps them to use the system.

### **5) Supports all Phases of the Decision Making :**

It can support all the four phases of decision making, viz intelligence, design, choice, and implementation.

### **6) Supports Positive Group Behavior :**

In a group meeting, as participants can share their ideas more openly without the fear of being criticized, they display more positive group behavior towards the subject matter of the meeting.

## **Components of GDSS**

A group decision support system (GDSS) is composed of 3 main components, namely hardware, software tools, and people.

### **1) Hardware :**

It includes electronic hardware like the computer, equipment used for networking, electronic display boards and audiovisual equipment. It also includes the conference facility, including the physical set up – the room, the tables, and the chairs – laid out in such a manner that they can support group discussion and teamwork.

### **2) Software Tools :**

It includes various tools and techniques, such as electronic questionnaires, electronic brainstorming tools, idea organizers, tools for setting priority, policy formation tool, etc. The use of these software tools in a group meeting helps the group decision-makers to plan, organize ideas, gather information, establish priorities, take decisions and document the meeting proceedings. As a result, meetings become more productive.

### **3) People :**

It comprises the members participating in the meeting, a trained facilitator who helps with the proceedings of the meeting, and an expert staff to support the hardware and software. The GDSS components together provide a favorable environment for carrying out group meetings.