

# Data Warehousing and Business Intelligence Trends, Business Applications- tools

- **Business Intelligence:** Large business organizations usually receive large amounts of data from various sources. This data is always exploitable to obtain diverse sets of information that help in making better business decisions. These actionable insights may be descriptive, predictive, or prescriptive. BI represents the various methods and tools used for the collection, integration, analysis and visualization of business information. It could be considered synonymous with data analytics in particular to the business world.

# What is Business Intelligence?

- Business Intelligence is one of the most powerful tools many organizations use to know their customer base and market better. It describes the business methodology in which the raw data is transformed into useful information which helps in decision making.

# Benefits of Business Intelligence

- Business intelligence has broad applications, and if talking about the benefits of business intelligence in the retail sector, nowadays business intelligence tools enable organizations to take benefit of data not only to assume current sales but also to estimate future potential, patterns, trends and know the demand of the customer on a deeper level.

# Business Intelligence techniques

- These are the given business intelligence techniques
- **Data analysis visualization:**
- Data analysis visualization is all about how you visualize your data. It presents data on dashboards and utilizes customized metrics related to the business to make better decisions based on facts.
- **Reporting:**
- Business intelligence tools are used for reporting information gathering from all the sources and process it to enable better reporting and financial decision making with a rational mind.
- **Predictive Analytics:**
- Predictive analytics is all about how do you know a strategy will work? The fact is you don't know, and if you know, not 100 percent. However, with business intelligence, you can create an evidence-based decision to drive business further. Business intelligence enables you to make a reasonable prediction of the latest trends and customer behaviors that impact the organization's overall development.

# Data Warehouse:

- Data Warehouse is a system and set of technologies at the back-end, that helps in collecting large amounts of dissimilar data from various sources and storing them for later use. Good data warehouses have business meaning backed into them facilitating future extraction and analysis. Business Intelligence is one of the applications that make use of data warehouses. Data Warehouses generally follow a multidimensional paradigm (related to OLAP) where data is held in Fact Tables (tables covering numbers such as revenue or costs) and Dimensions (things we want to view the facts by, such as region, office, or week).

## Business Intelligence

It is a set of tools and methods to analyze data and discover, extract and formulate actionable information that would be useful for business decisions.

It is a Decision Support System (DSS).

Serves at the front end.

The aim of business intelligence is to enable users to make informed, data-driven decisions.

Collects data from the data warehouse for analysis.

Comprises business reports, charts, graphs, etc.

BI as such doesn't have much use without a data warehouse as large amounts of various and useful data is required for analysis.

Handled by executives and analysts relatively higher up in the hierarchy.

The role of Business Intelligence lies in improving the performance of business by utilizing tools and approaches that focus on counts, statistics, and visualization.

## Data Warehouse

It is a system for storage of data from various sources in an orderly manner as to facilitate business-minded reads and writes.

It is a data storage system.

Serves at the back end.

A data warehouse's main aim is to provide the users of business intelligence; a structured and comprehensive view of available data of an organization.

Collects data from various disparate sources and organizes it for efficient BI analysis.

Comprises of data held in "fact tables" and "dimensions" with business meaning incorporated into them.

BI is one of many use-cases for data warehouses, there are more applications for this system.

Handled and maintained by data engineers and system administrators who report to/work for the executives and analysts.

The reflection of actual database development and integration process is given by Data Warehouse and in addition, Data Profiling and Company validation standards.

# Applications of Business Intelligence

- **Sales Intelligence** - A key application of BI focuses on where your business meets the customer. Customer negotiation is a crucial skill that every organization's sales department should foster. Sometimes it can be hard to move leads along the pipeline and convince potential clients to buy your product or service. Through the applications of [business analytics](#) and intelligence, this process is becoming smoother and more predictable.
- **Visualization** - Business intelligence software utilizes a range of data analytic tools that are designed to analyze and manage data related to your business operations. This data, presented in the form of [visualizations](#), allows the organization to monitor logistics, sales, productivity and much more. Some business intelligence platforms offer custom reporting abilities where users can specify their parameters. Others offer out-of-the-box reporting templates that already include industry-standard metrics.



# Applications of Business Intelligence

- **Reporting** - A crucial business application of BI is reporting. As we've covered, business intelligence tools collect and study unstructured sets of data in addition to organizing and using them to generate a range of different types of reports. These can include staffing, expenses, sales, customer services, and other processes.
- **Performance Management** - With BI applications, organizations can monitor goal progress based on pre-defined or customizable timeframes. The data-driven goals may include project completion deadlines, target delivery time, or sales goals. For example, if you'd like to reach a certain sales goal, your BI system can analyze previous months of data and suggest a reasonable goal to aim for based on past performance.

# Examples of BI software:

- SAP, Sisense, Datapine, Looker, etc.

# Examples of Data warehouse software:

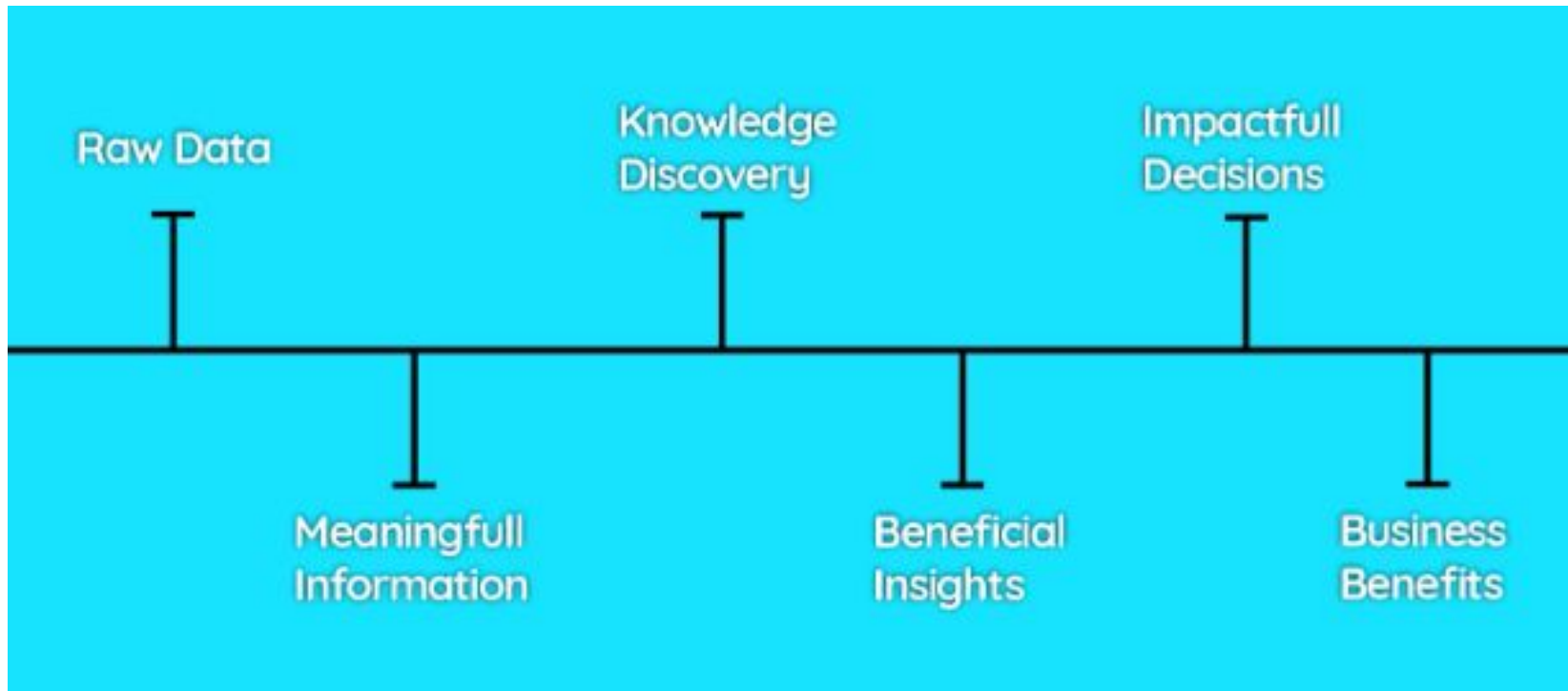
- BigQuery, Snowflake, Amazon, Redshift, Panoply, etc.

# Business Intelligence

- Business Intelligence is the talk of a new changing and the 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 be 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 on the same page.
- Measurement for creating KPI (Key Performance Indicators) on the basis of historic data fed in the system.
- Identify the benchmark and then set the benchmarks for different processes.
- Business Intelligence systems can use to identify the market trends and also to spot business problems that need to be identified and solved.
- Business Intelligence helps in data visualization that will increase the quality of data and then also increases the quality of decision making.
- Business Intelligence systems can be used by large enterprises, 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 the unstructured data.
- In Decision Support System.
- In Executive Information System (EIS).

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