

Unit 1 & 2

Long answers →

Q1. Business Intelligence components

- Business Intelligence is a set of processes and technologies that convert raw data into meaningful information that drives profitable business actions
- Business intelligence is the process of collecting and processing business information to derive insights and make profitable business decisions.

A solid BI architecture framework consists of →

1. Collection of data - collection of relevant data from various internal or external sources such as flat files, ERP's, CRM's, databases etc.
2. Data Integration - data collected is integrated into a centralized system ^{with the help of ETL processes}. The data is also cleaned and prepared for analysis. (ETL = Extract, Transform, Load)
3. Storage of data - This is where data warehousing comes into picture. Data warehouse is a place where data is stored and made available for querying and analysis.
4. Data analysis - After data is processed, stored and cleaned, it is ready to be analysed. With the help of the right tools, data is visualized and used for strategic decision making.

5. Distribution of data - Data now in the form of graphs and charts can be distributed in various forms like dashboard, online reporting etc.
6. Reaction based insights - Actionable insights are derived from the data and used to make business decisions that ensure the company's growth.

COMPONENTS OF BI →

There are five components of business intelligence →

1. OLAP (Online Analytical Processing) →

- Online Analytical processing is a concept in which data is analysed through multiple dimensions with the help of a structure called Cube.
- OLAP helps convert data into information
- The main objective of OLAP is to summarize information from a large database ~~into~~ for decision making process.
- Report generated through OLAP can be ~~generated in~~ presented in a format as per requirement of end user.
- 3 types of OLAP →
 - multidimensional OLAP
 - relational OLAP
 - hybrid OLAP

Advantages of OLAP →

- ensure that response to query is consistently quicker
- helps to work with data that is difficult to query through SQL.
- lets user create view with the help of spreadsheet.

2. Corporate Performance Management →

- CPM encompasses methods and ^{activities} ~~techniques~~ used to monitor and manage the business performance of a company
- It offers business owners an integrated approach to planning, forecasting for finance, sales, marketing, HR, and operations.
- It joins the company strategies with plans and executions, thus helping a business succeed and improve.
It is important for companies looking for such changes.

3. Real-Time Business Intelligence →

- RTBI is used when the sorting and analysing of business data must be done at the collection stage.
- It allows the company to get insights on the business process as soon as possible to take strategic action.
- RTBI is becoming especially popular in fast paced ~~modern~~ modern society.

4. Data warehouse and Data Mart →

- Data warehouse is a large collection of business data used to help the organization to make decisions.
- Once the data needed has been identified, it is time to "extract, transform and load" it into the data warehouse.
- Once data is captured into the data warehouse, it cannot be changed.
- Data within the data warehouse is maintained in the form of star schema, snowflake schema and galaxy schema.
- Data mart is that portion of the access layer of data warehouse that the end user utilizes.
- Data mart is a subset of data warehouse.
- Advantages of data mart →
 - easy to create and maintain
 - provides easy access to daily used data
 - improves decision making process for end user.

5. Data sourcing →

- Business intelligence is about extracting information from multiple sources of data.

- The key to data sourcing is to obtain the information in ~~electrical form~~. electronic form.
- Operational data sources to take advantage of include -
 - ERP (Enterprise Resource Planning)
 - CRM (Customer Relationship management)
 - E-Commerce apps
 - Company databases
 - flat files
 - RSS feeds etc.