

### **Need for Data Analysis**

- Managers must be able to track daily transactions to evaluate how the business is performing
- By tapping into the operational database, management can develop strategies to meet organizational goals.
- Data analysis can provide information about short-term tactical(routine) evaluations and strategies

### **What Is BI (Business Intelligence)**

- Business Intelligence (BI) is a term used to describe a comprehensive,cohesive and integrated set of tools and processes used to capture,collect,integrate,store, and analyze data with the purpose of generating and presenting information used to support business decision making.
- BI is about creating intelligence about a business.
- BI is a set of processes, architectures, and technologies that convert raw data into meaningful information that drives profitable business actions.
- BI systems help businesses to identify market trends and spot business problems that need to be addressed.
- BI technology can be used by Data analyst, IT people, business users and head of the company.
- BI system helps organization to improve visibility, productivity and fix accountability
- BI is not a product by itself, but a framework of concepts practices, tools and technologies that help a business.
- BI involves the following general steps:
  - 1.**Collectiong and storing** operational data.
  - 2.**Aggregating** the operational data into decision support data.
  - 3.**Analyzing decision support** data to generate information.
  - 4.**Presenting** such information to the end user to support business decisions.
  - 5.**Making business decisions**, which in turn generate more data that is collected, stored, etc.
  - 6.**Monitoring** results to evaluate outcomes of the business decisions.
- The draw-backs of BI is that it is time-consuming costly and very complex process.

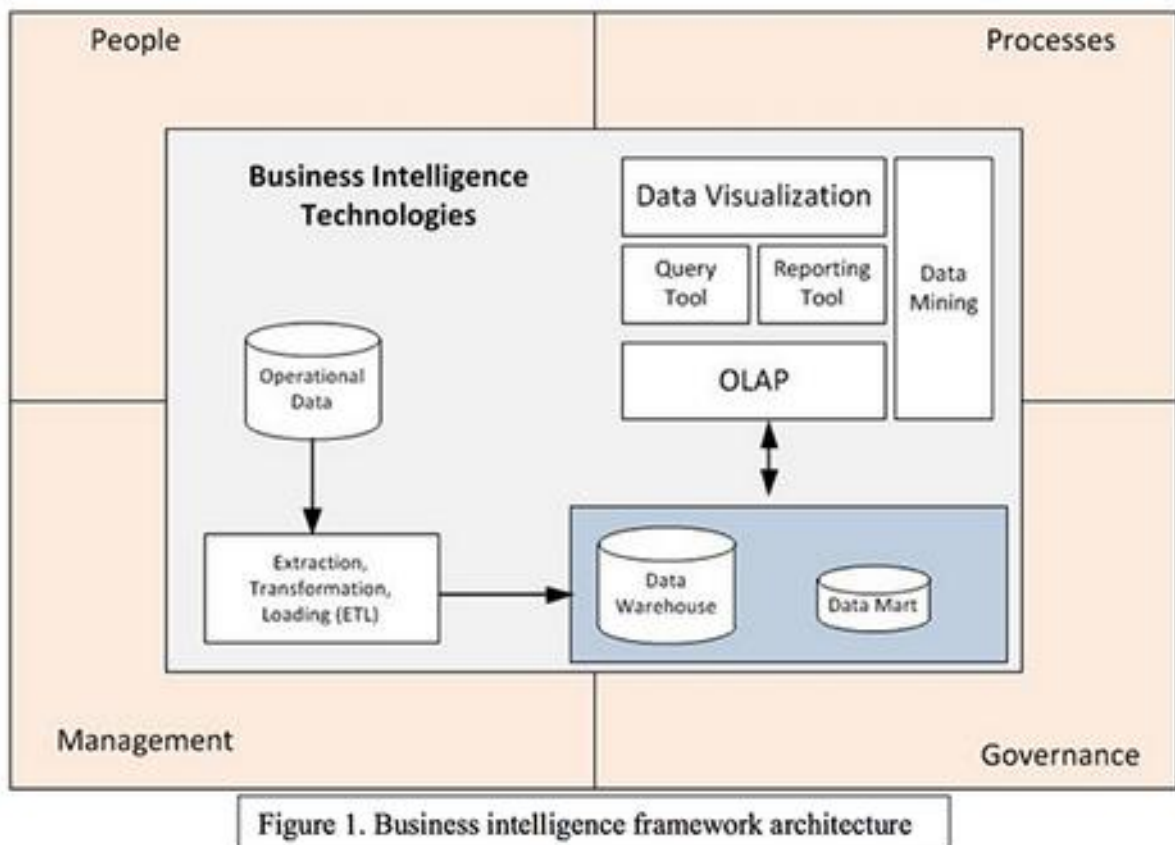
### **Benifits of BI**

- BI is faster more accurate process of reporting critical information.
- BI facilitates better and efficient decision-making process.
- BI provides timely information for better customer relationship management.
- BI improves profitability of the company.
- BI provides a facility of assessing organization's readiness in meeting new business challenges.

- BI supports usage of best practices and identifies every hidden cost.

## Business Intelligence Architecture

- BI is to gather, integrate, and store business data for the purpose of creating information.
- BI integrates people and processes using technology in order to add value to the business.
- BI tools focus on the strategic(Basic) and tactical (Routine) use of information.
- **A business intelligence architecture** is a framework for organizing the data, information management and technology components that are used to build business intelligence ([BI](#)) systems for reporting and [data analytics](#).
- The main components of business intelligence are data warehouse, business analytics and business performance management and user interface.
- Data warehouse holds data obtained from internal sources as well as external sources. The internal sources include various operational systems.
- Business analytics creates a report as and when required through queries and rules. Data mining is also another important aspect of business analytics.
- Business performance management is a linkage of data with business objectives for efficient tracking. This business performance is then broadcasted to an executive decision-making body through dashboard



## Key Features OF BI Architecture

- **MDM (Master Data Management)** is a collection of concepts, techniques, and processes for the proper identification, definition, and management of data elements within an organization. MDM's main goal is to provide a comprehensive and consistent definition of all data within a organization.
- Governance is a method or process of government. BI provides a method for controlling and monitoring business health and for consistent decision making.
- KPI are quantifiable measurements that assess the company' effectiveness or success in reaching its strategic and operational goals.

- There are many different KPI used by different industries. Some Examples of KPI are :

**General :** Year-to-year measurements of profit by line of business, same store sales, product turnovers, product recalls, sales by promotion, sales by employee, etc.

**Finance :** Earnings per share, profit margin, revenue per employee, percentage of sales to account receivables, assets to sales, etc.

**Human resources:** Applicants to job openings, employee turnover, employee longevity, etc.

**Education :** Graduation rates, number of incoming freshmen, student retention rates, etc.

## BI Architecture Component

COMPONENT	DESCRIPTION
ETL Tools	Data extraction, information, and loading (ETL) tools collect, filter, integrate and aggregate operational data to be saved into a data store optimized for decision support.
Data Store	The data store is optimized for decision support and is generally represented by a data warehouse or a data mart.
Data Query and analysis tools	This component performs data retrieval, data analysis, and data-mining tasks using the data in the data store.
Data presentation and visualization tools	This component is in charge of presenting the data to the end user in a variety of ways.

**DATA MINING** : It refers to analyzing massive amounts of data to uncover hidden trends, patterns and relationship etc.. In other words , data mining focuses on the discovery and explanation stages of knowledge acquisition.

**OLAP** : Online analytical processing provides

- multidimensional data analysis
- Advance data support
- Easy to use end user interface

**DATA MART** : It is a small , single-subject data warehouse subset that provides decision support to a small group of people.