

# Business Intelligence



## Acciojob/ Business Intelligence

# Introduction to Business Intelligence (BI)



- Business intelligence (BI) is a set of **strategies, tools, processes, and technologies** that organizations use to **analyze raw data and convert it into actionable insights** for **informed decision-making**.
- In today's highly competitive business landscape, BI has become indispensable for organizations to stay competitive and **make data-driven decisions**.
- The primary **goal** of BI is to provide deeper understanding of business operations, performance, and trends by transforming raw data into meaningful information, uncover patterns and trends, and generate insights that can drive strategic and operational decision-making.
- BI provides organizations with a comprehensive view of their business performance, enabling them to identify opportunities, mitigate risks, and optimize operations.



# Introduction to Business Intelligence (BI)

- By leveraging BI, organizations can make informed decisions based on reliable data, leading to **improved efficiency, increased profitability**, and a **competitive advantage** in the market.
- Overall, business intelligence plays a crucial role in enabling data-driven decision-making and providing organizations with a competitive edge by turning raw data into actionable intelligence. It helps businesses make informed choices, improve efficiency, enhance performance, and achieve their strategic objectives.
- In nutshell, Business Intelligence means all the tools and techniques that helps business make - ***“Intelligence Business Decision”***.



# Objectives of Business Intelligence

The primary objectives of business intelligence (BI) are centered around improving decision-making processes' and driving business success. This can be achieved by -

- Improve decision-making processes
- Enhance operational efficiency
- Increase competitive advantage
- Enable data-driven decision-making
- Drive business growth and profitability
- Optimization of business processes
- Business Risk Management
- Forecasts and Predictive Analytics
- Improve data quality and governance



# Business Intelligence Process/ Stages in the BI value chain

The business intelligence (BI) process involves a series of steps that enable organizations to convert raw data into actionable insights. Here are the key stages of the BI process -

**Data Sourcing:** Data acquisition and extraction from various sources

**Data Engineering:** Data transformation and cleansing to ensure data quality

**Reporting and visualization of data** to communicate findings

**Data modeling and analysis** to discover insights and patterns

**Actionable insights** and decision-making based on the analysis

- Deals with storage, management and access of raw data.
- Data warehousing
- Identify and explore various data sources
- Deals with structured and unstructured

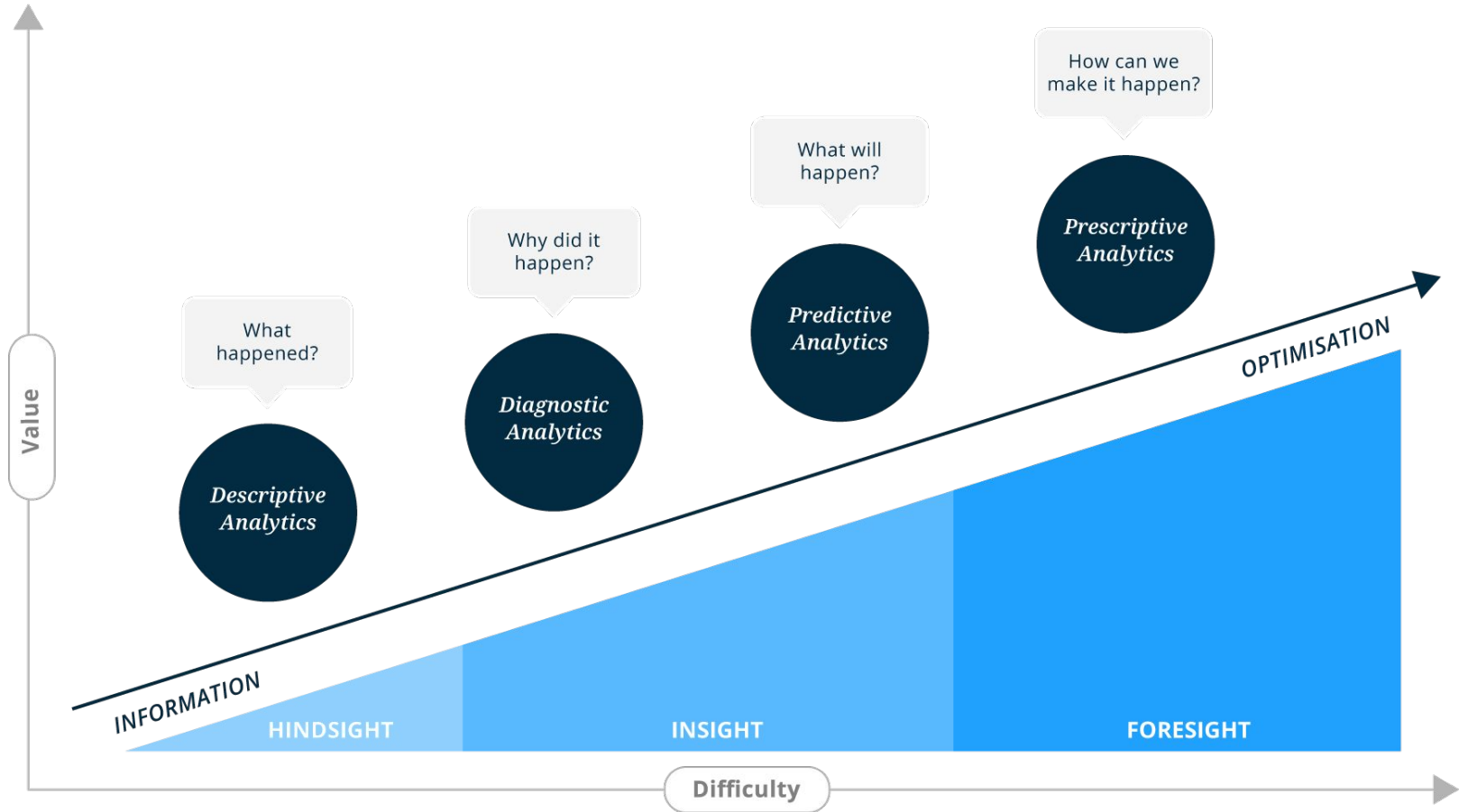
- Convert data into a structured (tabular) format
- Remove or impute missing values
- Capping outliers
- Remove multicollinearity

- Exploratory Data Analysis (EDA)
- Summarize and find associations
- Data Analysis using Descriptive statistics, trend analysis, charts, graphs tables, pivots etc

- Statistical Analysis
- Inferential analysis to assess statistical significance
- Predictive and prescriptive analysis.
- Forecasting using various ML models

- Proactive decision-making and its evaluation
- Use insights, knowledge, and intelligence gained from analytics to enable decision-makers to make data-driven decisions

# Evolution of value from Business Intelligence



# Key techniques of Business Intelligence

Business intelligence (BI) relies on various key components to effectively collect, analyze, and present data-driven insights. These components or techniques play a crucial role in the BI ecosystem. The Key techniques of BI are -

- Data collection and integration
- Data warehousing and data marts
- Data cleansing and transformation
- Analytics and reporting tools
- Dashboards and visualization



# Key Business Intelligence Technologies

BI techniques we discussed can be applied using various technologies to enable efficient data processing, integration, analysis, and presentation. Listed below are the key technologies used in Business Intelligence at different stages:

- Data warehouses and data lakes (for centralized data storage)
- Business intelligence platforms (for data integration and analysis)
- Reporting and visualization tools (for data presentation)
- Data mining and Machine Learning algorithms (for advanced analytics and forecasting models)
- Cloud-based solutions (for scalable and accessible BI capabilities)



# BI landscape - Gartner Magic Quadrant

Magic Quadrant - Analytics and BI platforms (2023)

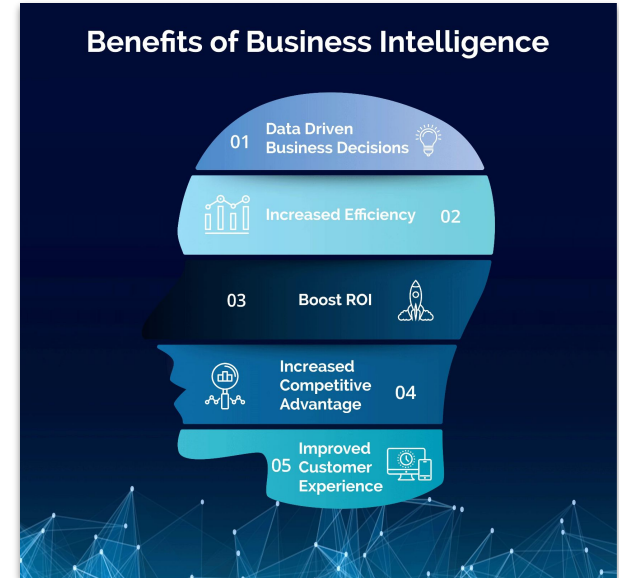


Source: Gartner

# Benefits of Business Intelligence

Business intelligence (BI) offers a wide range of benefits that can positively impact an organization's performance and strategic decision-making.

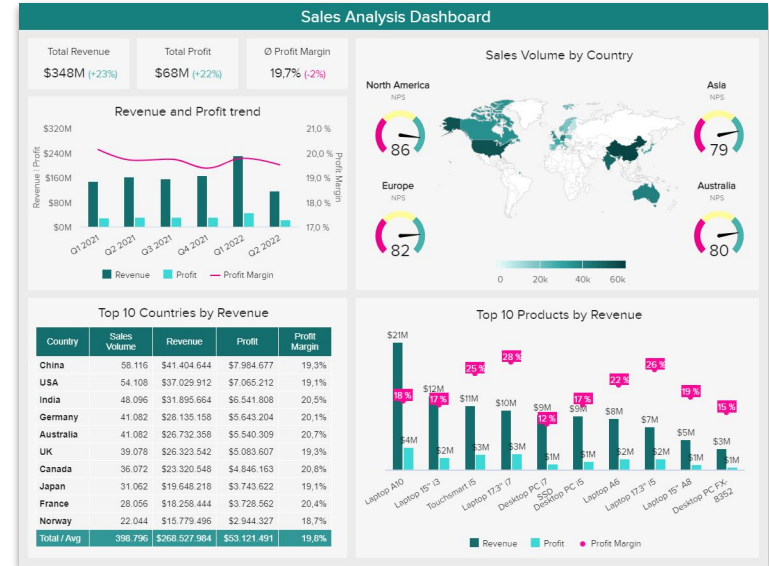
- Access to accurate and timely information
- Improved decision-making at all levels of the organization and improve the business ROI
- Increased operational efficiency and monitor
- Enhanced visibility and transparency into business performance by making drilling down data possible easily
- Identification of new business opportunities and trends



# Use Cases of Business Intelligence

Business intelligence finds application almost in every industry and across all levels and areas within an organization. Here are some key use cases:

- Sales and revenue analysis
- Customer segmentation and profiling
- Supply chain optimization
- Risk management and fraud detection
- Marketing campaign analysis
- Optimization of business resources
- HR resource planning



# Future Trends in Business Intelligence

Business intelligence is constantly evolving to meet the changing needs of organizations. With the boost in the adoption of the AI technologies, the space has become a real gold mine for investors. Here are some future trends to watch out for:

- AI and machine learning integration
- Predictive and prescriptive analytics
- Real-time and self-service BI capabilities
- Mobile and cloud-based BI solutions
- Data governance and ethics in BI

