

# INTRODUCTION TO BUSINESS INTELLIGENCE (BI)

# HISTORY AND EVOLUTION OF BUSINESS INTELLIGENCE:

- At the very beginning, historical data mining methods and tools were used for strategic managerial reporting purposes.
- The second evolutionary stage is characterized by On-Line Analytic Processing (OLAP) technologies and dimensional analysis of data stored in data warehouses and data marts.

- ◉ In the third stage Balanced Scorecard methodology is used as a means of Business Intelligence creation.
- ◉ With the emergence and growing popularity of EBusiness and other Internet applications and services the new stage of BI appeared since Web analytics and Web mining as a form of BI began to attract the wide professional attention.

- ◉ The fifth development stage started when usage of Business Dashboard technology became a core component of alerting and alarming systems in business decision-making supported by BI.
- ◉ Finally, nowadays we are witnessing the era of Mobile and location-based Business Intelligence founded on appropriate mobile and location-aware technologies.

# BI QUESTIONS

- ◉ What happened?
  - What were our total sales this month?
- ◉ What's happening?
  - Are our sales going up or down, trend analysis
- ◉ Why?
  - Why have sales gone down?
- ◉ What will happen?
  - Forecasting & What If Analysis
- ◉ What do I want to happen?
  - Planning & Targets

# WHERE IS BUSINESS INTELLIGENCE APPLIED?

## Operational Efficiency

- ◉ ERP Reporting
- ◉ KPI Tracking
- ◉ Product Profitability
- ◉ Risk Management
- ◉ Balanced Scorecard
- ◉ Activity Based Costing
- ◉ Global Sourcing
- ◉ Logistics

## Customer Interaction

- ◉ Sales Analysis
- ◉ Sales Forecasting
- ◉ Segmentation
- ◉ Cross-selling
- ◉ CRM Analytics
- ◉ Campaign Planning
- ◉ Customer Profitability

## 2. STYLES OF BUSINESS INTELLIGENCE:

There are 5 Styles of BI, which are presented below:

- 1) Enterprise Reporting** - Broadly deployed pixel-perfect report formats for operational reporting and scorecards/dashboards targeted at information consumers and executives.

**2) Cube Analysis - OLAP slice-and-dice**  
analysis of limited data sets, targeted at managers and others who need a safe and simple environment for basic data exploration within a limited range of data.

**3) Ad Hoc Query and Analysis - Full**  
investigative query into all data, as well as automated slice and-dice OLAP analysis of the entire database - down to the transaction level of detail if necessary. Targeted at information explorers and power users.



#### **4) Statistical Analysis and Data Mining -**

Full mathematical, financial, and statistical treatment of data for purposes of correlation analysis, trend analysis, financial analysis and projections.

Targeted at the professional information analysts.

#### **5) Alerting and Report Delivery -**

Proactive report delivery and alerting to very large populations based on schedules or event triggers in the database. Targeted at very large user populations of information consumers, both internal and external to the enterprise.

### 3. TYPES OF BUSINESS INTELLIGENCE TOOLS:

**The following are the types of Business Intelligence Tools:**

- a) Spreadsheets** - These interactive Computer Applications manage information in a visual format.
- b) Reporting and Querying Software** - These tools extract, sort and summarize data. There is a variety of software programs used to present this data, including open-source and commercial software types.

**c) Online Analytical Processing** - This processing approach quickly answers queries that are multi-dimensional. The types of applications included in this processing include business reporting, marketing, budget and forecasting.

**d) Data Mining** - Data mining is the bridge between statistics and computer science. It is used to uncover patterns in large sets of data.

**e) Data Warehousing** - This comprehensive database is used for reporting and data analysis. The information is uploaded from a separate operational system.

**f) Process Mining** - This process management technique logs various events to determine business processes. Process mining provides techniques and tools that will discover control data, process and social structures from event logs.

**g) Digital Dashboards** - A single page interface in real-time that show at-a-glance information.

**h) Decision Engineering** - A framework that utilizes the best practices for organizational decisional making. It helps businesses make decisions based on a variety of business approaches.

**i) Business Performance Management** - Management and Analytic Processes that manage a business' performance to achieve short and long-term goals.

## 4. BENEFITS OF BUSINESS INTELLIGENCE:

**The following are the benefits of Business Intelligence:**

- ◉ Faster reporting, analysis or planning
- ◉ More accurate reporting, analysis or planning
- ◉ Better business decisions
- ◉ Improved data quality
- ◉ Improved employee satisfaction
- ◉ Improved operational efficiency
- ◉ Improved customer satisfaction
- ◉ Increased competitive advantage
- ◉ Reduced costs
- ◉ Increased revenues
- ◉ Saved headcount