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B.Com Honours | Semester I | Calicut University

Business Analytics for Decision Making

Course Code: COM1MN110 • Module 1 Notes

1. Introduction to Business Analytics

In contemporary business environments, organizations generate vast quantities of data from customer interactions, transaction logs, and supply chains. Business Analytics (BA) represents the systematic exploration of an organization's data through statistical and quantitative methods to drive data-driven decision-making. This module covers the definition, features, and core paradigm of business analytics, differentiating it from traditional business analysis, and introduces the four major types of analytics.

Defining Business Analytics

- **Definition:** Business Analytics is the process of transforming raw data into actionable business insights using statistical models, machine learning algorithms, and data visualization tools.
- **Key Features:** It is highly data-driven, emphasizes forecasting future trends (rather than just reporting past events), relies on software technologies, and is action-oriented (focused on solving practical business problems).

Analytics as a Movement and Decision-Making Paradigm

Historically, managers relied on intuition or the "HiPPO" (Highest Paid Person's Opinion) to make choices. Business Analytics represents a structural shift:

Cultural Movement

Promotes a corporate culture of empirical evidence over personal bias or authority, democratizing data access across departments.

Decision Paradigm

Bases corporate choices on rigorous data analysis, reducing errors, optimizing resources, and enhancing predictability.

Business Analysis vs. Business Data Analytics

Although phonetically similar, the two disciplines focus on different aspects of organizational change:

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Dimension	Business Analysis	Business Data Analytics
Primary Focus	Workflows, business processes, software requirements, and organizational design.	Data cleaning, statistical modeling, pattern recognition, and predictive insights.
Core Task	Defining "what" the business needs and bridging communication between business and IT.	Extracting mathematical patterns from databases to support decision models.
Typical Tools	UML diagrams, flowcharts, SWOT analyses, and requirements management tools.	Python, R, SQL, Tableau, Power BI, and statistical software (SPSS).
Outcome	Process optimization, software specifications, and structural re-engineering.	Statistical forecasts, segmentation models, and data dashboards.

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2. The Four Types of Analytics

Organizations mature through four progressive levels of analytical capability, answering different business questions:

Descriptive Analytics (What Happened?)

Consolidates historical data to describe past events. Uses reports, dashboards, and data visualization. E.g., analyzing monthly sales reports or web traffic logs.

Diagnostic Analytics (Why Did It Happen?)

Drills down into historical data to find root causes. Uses correlation analysis, data mining, and queries. E.g., discovering that sales dropped in region A due to a logistics delay.

Predictive Analytics (What Will Happen?)

Uses historical patterns and statistical models to forecast future trends. Uses regression, time series, and machine learning. E.g., predicting customer churn or next month's inventory demand.

Prescriptive Analytics (What Should We Do?)

Recommends specific actions to maximize outcomes. Uses linear programming, optimization algorithms, and simulations. E.g., optimizing supply chain routes or automated dynamic pricing.

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