Business Analytics
Introduction to Analytics
Agenda

- Introduction
- Data
- Predictive modeling using Linear Regression
1. Introduction to Analytics

I. Definition

II. Analytics vs. Analysis

III. Business Analytics

IV. Types of Analytics

V. Business Domains within Analytics

VI. Challenges

VII. Examples
1.a. What is Analytics?

- Analytics is the discovery and communication of meaningful patterns in data using tabulation and visualization techniques to communicate insights.

- Especially valuable in areas rich with recorded information.

- Analytics relies on the simultaneous application of computer programming and quantitative techniques like statistics and operations research to quantify performance.

- Analytics may be used as input for human decisions or may drive fully automated decisions.
Data Analysis is used to generate Insight which is communicated to recommend actions.

Analytics consists of entire methodology of Data Analyses, Insights generation and Communication.
1.b. Business Analytics

- Skills
- Technologies
- Applications
- Practices

Past Business Performance
- Continuous & Iterative exploration and investigation

Gain Insight and drive business planning

- Business analytics refers to the skills, technologies, applications and practices for continuous iterative exploration and investigation of past business performance to gain insight and drive business planning.

- Focuses on developing new insights and understanding of business performance based on data and statistical methods.

- Makes extensive use of data, statistical and quantitative analysis, explanatory and predictive modeling and fact-based management to drive decision making.
## 1.c. Types of Analytics

<table>
<thead>
<tr>
<th>Descriptive Analytics</th>
<th>Predictive analytics</th>
<th>Prescriptive analytics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain insight from historical data with reporting, scorecards, clustering etc.</td>
<td>Predictive modeling using statistical and machine learning techniques</td>
<td>Recommend decisions using optimization, simulation etc.</td>
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1.d. Basic domains within Analytics

- Retail sales analytics
- Risk & Credit analytics
- Marketing analytics
- Behavioral analytics
- Collections analytics
- Fraud analytics
- Pricing analytics
- Telecommunications
- Supply Chain analytics
1.e. Challenges

- Data volume and size
- Computational power
- Skilled professionals
1.f. Example - (Risk Analytics in Retail Banking)

- Predictive Models in banking industry is widely developed to bring certainty across the risk scores for individual customers.

- Credit Scores are built to predict individual's delinquency behavior and also scores are widely used to evaluate the credit worthiness of each applicant and rated while processing loan applications.

**Bank Lending**

- **Secured (e.g. Home loan, Auto loan)**
  - Equated monthly installments (EMI)

- **Unsecured (e.g. Personal loan, Credit Card)**
  - EMI / Balance payment due

Model Chances/probability of default or missing the payment based on credit history

Rank ordered in the form of a score card (credit score)
1.g. Tools/Softwares used

- SAS (www.sas.com/)
- SPSS (http://www-01.ibm.com/software/analytics/spss/)
- R (http://www.r-project.org/)
- Ms Excel (http://office.microsoft.com/en-in/)
Thank you!