

# Business Analytics Notes

## Lecture 1

Business analytics is 'a process of transforming data into actions through analysis and insight in the context of organisational decision making and problem solving'.

Data, facts and analysis are useful to decision making.

Companies equip every decision maker at every level, with analytics, so that they can make the right decision.

Strong relationship between analytics, and; profitability, revenue, and shareholder return.

Business analytics is used for; new customer acquisition, customer loyalty, pricing decisions, financial forecasting, insurance rate settings, supply optimisation, staff optimisation, product placement, fraud detection, performance and injury management (sport).

Person-job fit – Employee recruit has skills which fit requirements of the job.

Person-organisation fit – employee recruit has skills which fit organisation's values, motivations, and personality.

Psycholinguistic analytics – Big personality traits, fundamental needs, and human values.

Involves collection, organisation, and manipulation of data. Supported by three major components; descriptive analytics (diagnostic), predictive analytics, prescriptive analytics (pre-emptive).

Descriptive analytics – understand past and present performance and make informed decisions. Most commonly used form of analytics.

Predictive analytics – analyses past performance to predict future performance. Done by examining historical data, and detecting patterns or relationships in these data.

Prescriptive analytics – uses optimisation to identify the best alternative to minimise or maximise some objective.

Role of statistics in analytics – statistics relates to the collection, analysis, interpretation, and presentation of data. Can be used to explore and summarise data, draw inferences about an entire population from a sample, make predictions or forecasts. Statistics is also the study of variation in data.

Data sources:

Primary sources – find the data yourself.

Secondary sources – use past data.

Data deluge – lots of big data (volume, variety and velocity (production speed)). Too much for companies to handle.

Structured data – public data, postcode, household, credit, market research, sales, transaction, invoice.

Unstructured data – social media, etc.

Entities – peoples, places, thing for which we store and maintain information.

Variable – characteristics of interests / attributes

Records/observations – set of measurements collected for an entity.

Data can be classified as being categorical or numerical.

Numerical data can be classified into discrete and continuous.

Discrete – if measuring how many

Continuous – if measuring how much.

Numerical data can be classified into categorical data (high, medium, low, etc.)

Models are used to summarise data and make it understandable. Can be written/verbal or visual representation (graph, flowchart), or mathematical representation (e.g. profit = revenue – expenses).