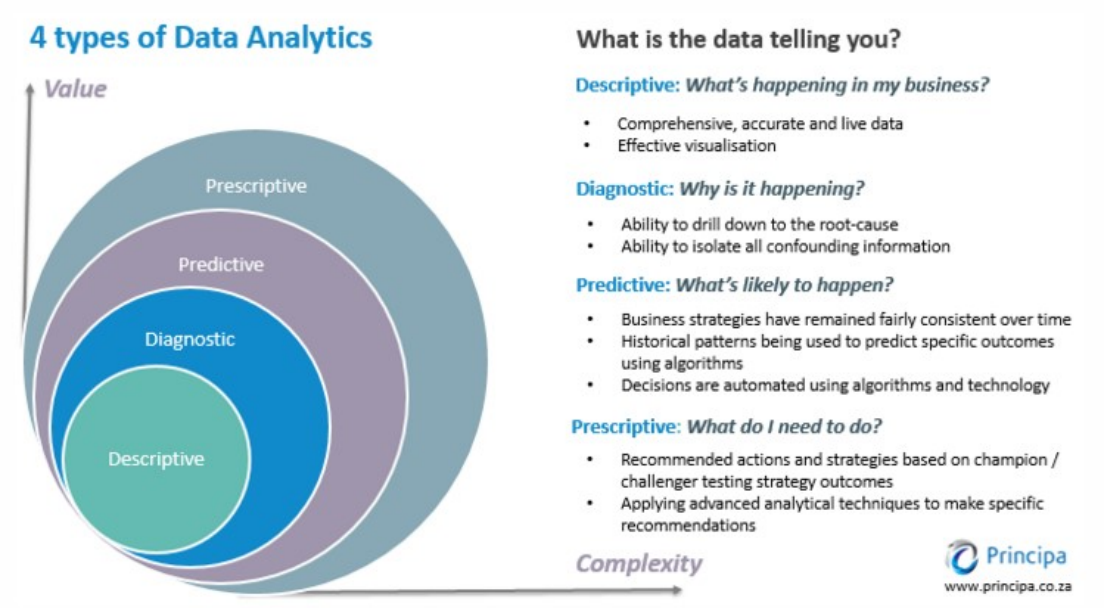
4 Types of Data Analytics



1. Descriptive: What is happening?

This is the most common of all forms. In business it provides the analyst a view of key metrics and measures within the business.

An example of this could be a monthly profit and loss statement. Similarly, an analyst could have data on a large population of customers. Understanding demographic information on their customers (e.g. 30% of our customers are self-employed) would be categorised as "descriptive analytics". Utilising effective visualisation tools enhances the message of descriptive analytics.

2. Diagnostic: Why is it happening?

This is the next step of complexity in data analytics is descriptive analytics. On assessment of the descriptive data, diagnostic analytical tools will empower an analyst to drill down and in so doing isolate the root-cause of a problem.

Well-designed business information (BI) dashboards incorporating reading of time-series data (i.e. data over multiple successive points in time) and featuring filters and drill down capability allow for such analysis.

3. Predictive: What is likely to happen?

Predictive analytics is all about forecasting. Whether it's the likelihood of an event happening in future, forecasting a quantifiable amount or estimating a point in time at which something might happen – these are all done through predictive models.

Predictive models typically utilise a variety of variable data to make the prediction. The variability of component data will have a relationship with what it is likely to predict (e.g. the older a person, the more susceptible they are to a heart-attack – we would say that age has a linear correlation with heart-attack risk). These data are then compiled together into a score or prediction.

In a world of great uncertainty, being able to predict allows one to make better decisions. Predictive models are some of the most important utilised across a number of fields.

4. Prescriptive: What do I need to do?

The next step up in terms of value and complexity is the prescriptive model. The prescriptive model utilises an understanding of what has happened, why it has happened and a variety of "what-might-happen" analysis to help the user determine the best course of action to take. Prescriptive analysis is typically not just with one individual action, but is in fact a host of other actions.

A good example of this is a traffic application helping you choose the best route home and taking into account the distance of each route, the speed at which one can travel on each road and, crucially, the current traffic constraints.

Another example might be producing an exam time-table such that no students have clashing schedules.