

Objective 1: Introduction to Business Analytics

- **What is Business Analytics is and how these techniques represent an opportunity.**
- **Understanding data and data distribution that exists in the world makes learning about statistics critically important.**
- **Understanding statistics is a way of thinking that can help you make better decisions**
- **How the DCOVA/CRISP framework for applying statistics can help you solve business problems**

Business Analytics

Reporting

OLAP

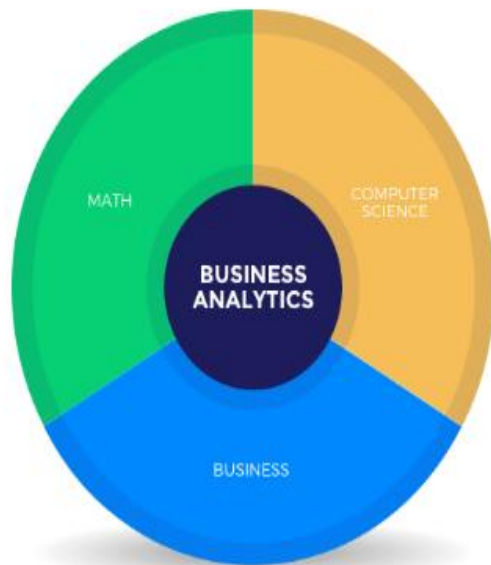
Performance
Management

Text Mining

Data Mining

Predictive
Analytics

Prescriptive
Analytics



WHAT IS A BUSINESS ANALYST?

The BA articulates the underlying needs of the business and serves as the conduit through which project vision is communicated and delivered.



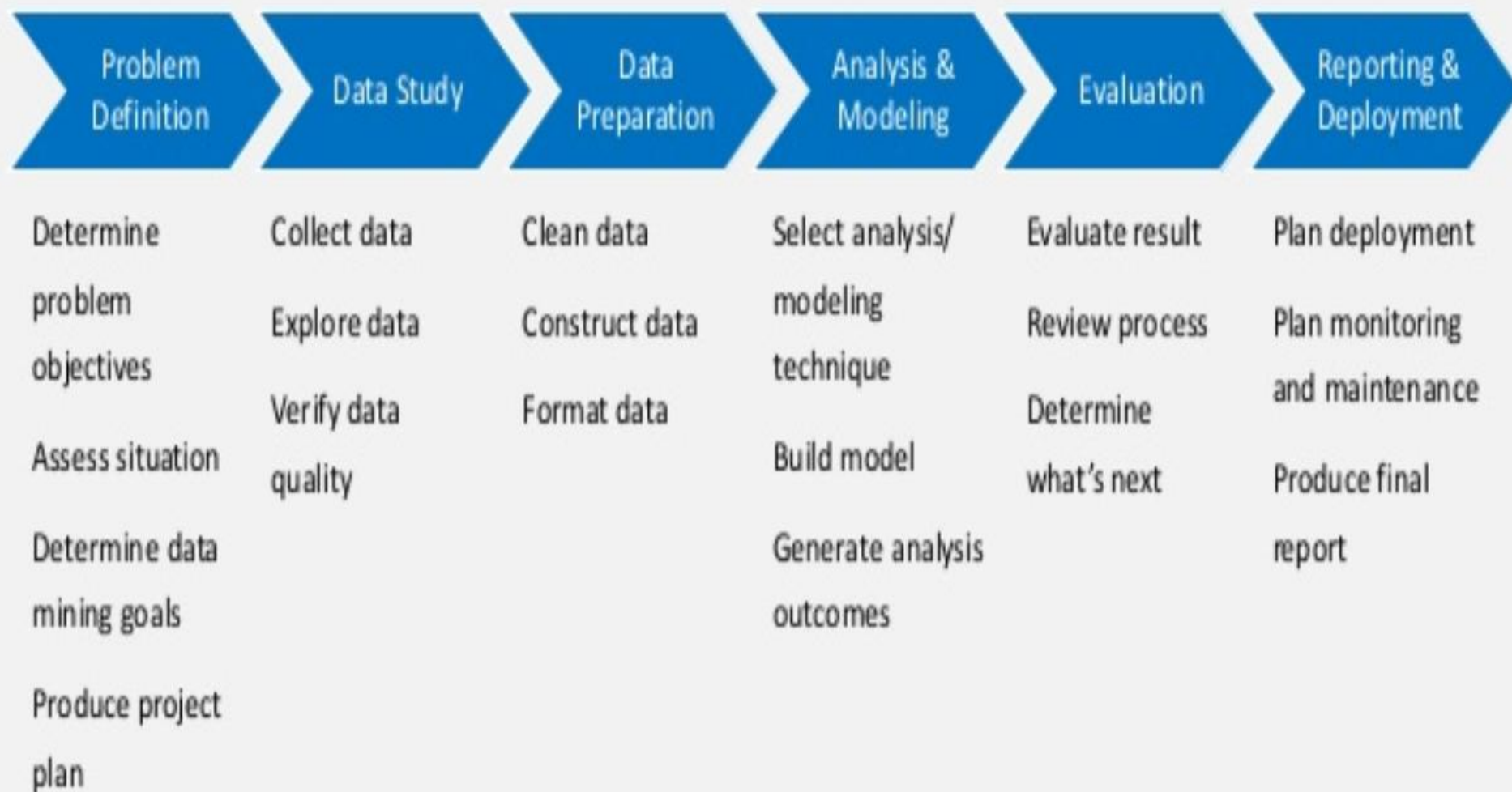


Business intelligence – Deals with *what* happened in the past and *how* it happened leading up to the present moment. It identifies big trends and patterns without digging too much into the *why*'s or predicting the future.

Business analytics – Deals with the *why*'s of what happened in the past. It breaks down contributing factors and causality. It also uses these *why*'s to make predictions of what will happen in the future.

	Business Intelligence	Advanced Analytics
Orientation	Rearview	Future
Types of questions	What happened When, who, how many	What will happen? What will happen if we change this one thing? What's next?
Methods	Reporting (KPIs, metrics) Automated Monitoring/Alerting (thresholds) Dashboards Scorecards OLAP (Cubes, Slice & Dice, Drilling) Ad hoc query	Predictive Modeling Data Mining Text Mining Multimedia Mining Descriptive Modeling Statistical / Quantitative Analysis Simulation & Optimization
Big Data	Yes	Yes
Data types	Structured, some unstructured	Structured and Unstructured
Knowledge Generation	Manual	Automatic
Users	Business Users	Data scientists, Business analysts, IT, Business Users
Business Initiatives	Reactive	Proactive

How to execute Business Analysis?





The diagram consists of a white rectangular frame containing two colored boxes. The left box is teal and contains the text 'Data Analytics' in white. The right box is light blue and contains the text 'Business Analytics' in white. Between the two boxes, centered vertically, is the text 'vs' in a dark grey font.

**Data
Analytics**

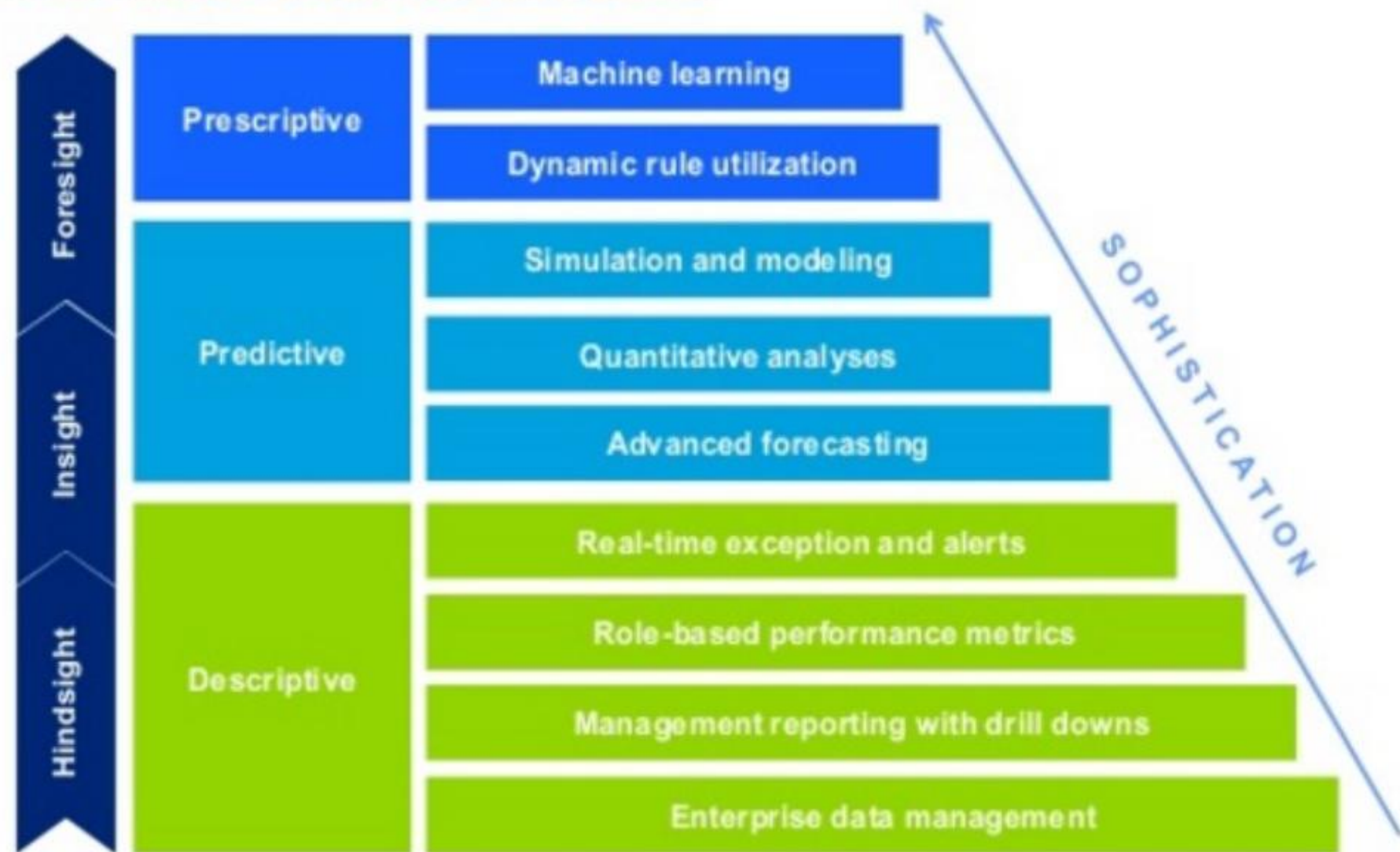
vs

**Business
Analytics**

Data Analytics is more technical centric than the other in terms of technical skill set as a data analyst would be doing hands-on data cleaning, data purging, finding correlations etc. A data analyst would love to dirty his hands on any of the latest tools out there and test his/her data on the tool and see what insights he/she can draw from it.

Business analytics, on the other hand, is kind of more process-oriented / functional role where a business analyst would be looking into the day to day operations of the company. A CEO/CMO won't understand what correlation is or what variables are really having a weightage on the transform function, hence business analyst. A business analyst should be able to interpret the data analyst terminologies and transom them to be presentable to their respective heads. A business analyst would also look into optimizing and would also be the one to call the shorts for upgrading/optimizing any models in the company/campaign.

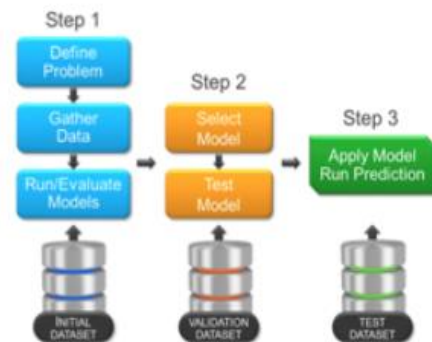
Analytics is the practice of deriving insights from data to make more effective decisions.





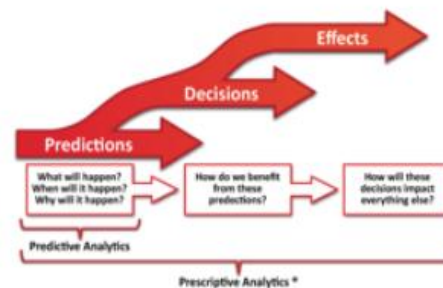
Exploratory analysis

- Use descriptive and/or diagnostic analytics to understand and characterize the data



Predictive analysis

- Extrapolate what may happen in the future based on the historical events in the data



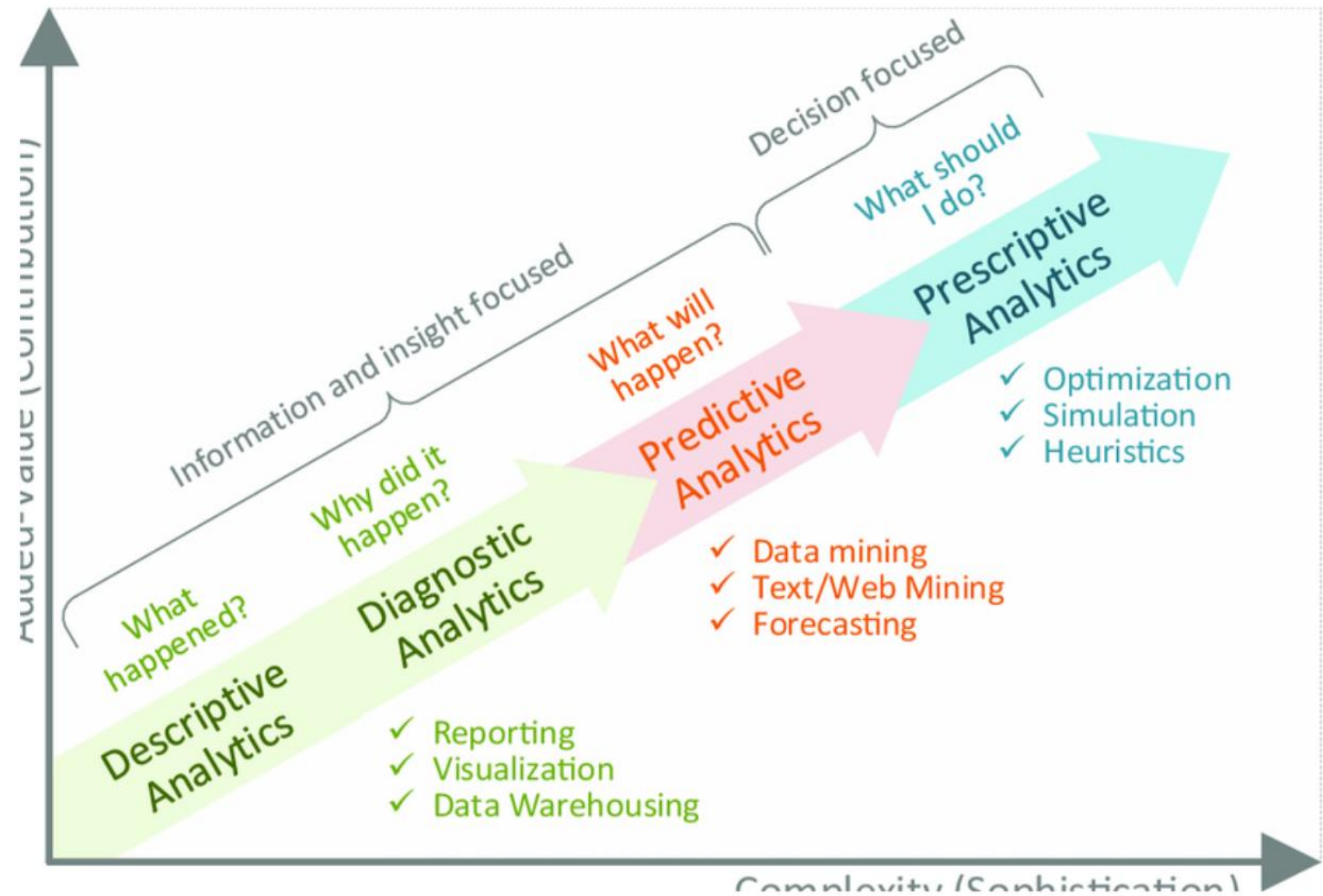
Prescriptive analysis

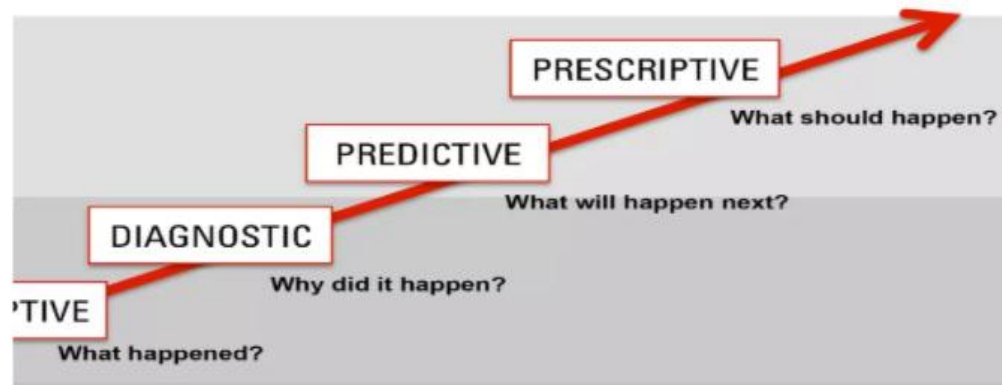
- Decide on the actions based on business rules assisted with diagnostic results and predictive insights developed



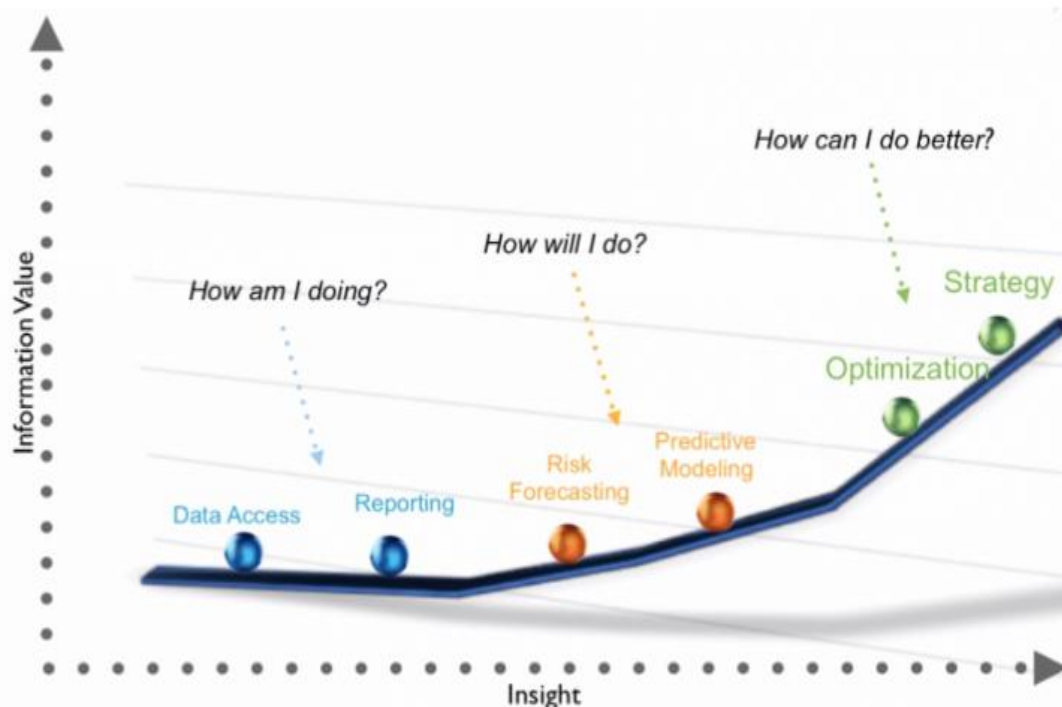
Optimization

- Obtain the optimal solution based on the historical behavior, extrapolated pattern for the future and business rules in place





Level of Analytical Difficulty & Business Impact



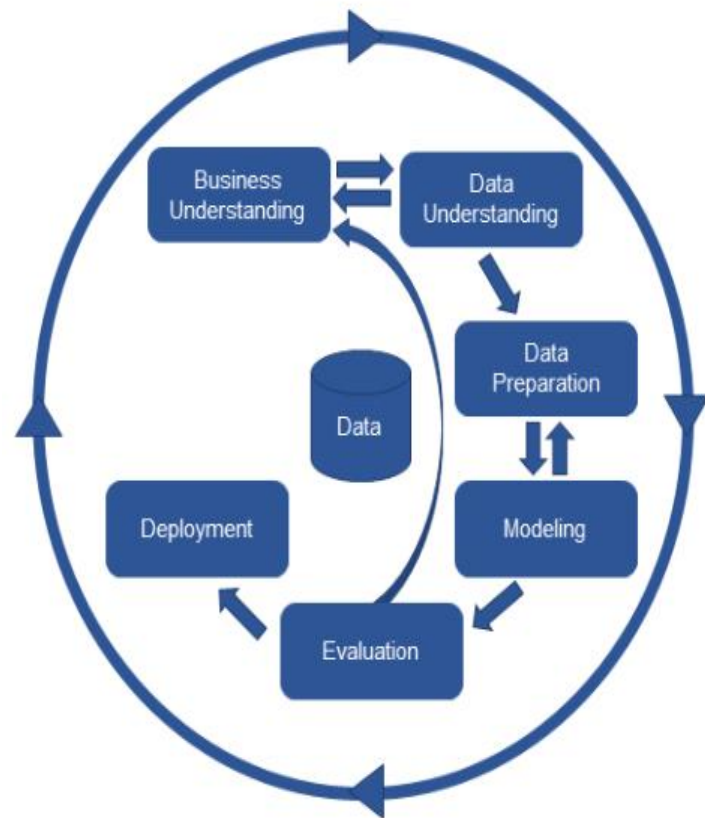
% (RE)INSURERS USING EACH ANALYTICS TYPE

Predictive	74%
Descriptive	71%
Diagnostic	61%
Behavioural	39%
Prescriptive	31%
Machine Learning / Artificial Intelligence	28%

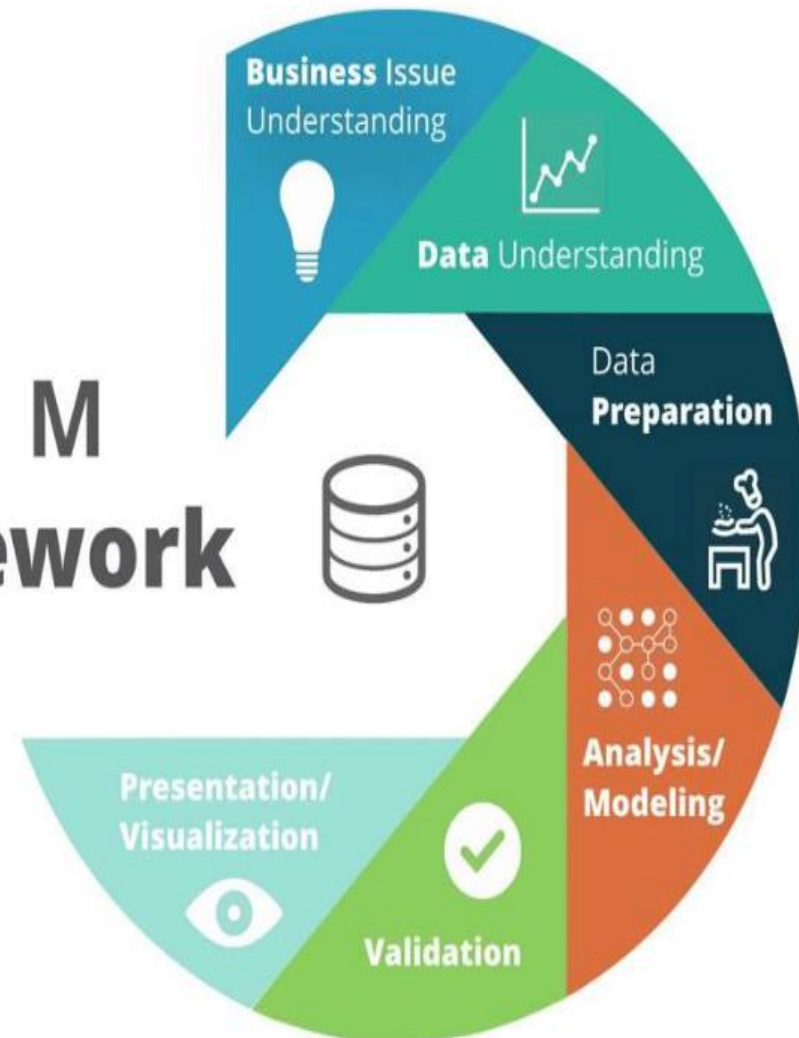
INSURANCE NEXUS: GLOBAL INSURANCE TREND MAP 2017

Levels	For Answering Questions like
Standard Report	What happened? When did it happen?
Ad Hoc Reports	How many? How often? Where?
Query Drilldown/OLAP	Where exactly is the problem? How do I find the answers?

CRISP



CRISP-DM Framework



- cross-industry process for data mining.
- CRISP-DM methodology provides a structured approach to planning a data mining project.

DOCA FRAMEWORK

To Properly Apply Statistics You Should Follow A Framework To Minimize Possible Errors

In this course, we will use **DCOVA**

- **Define** the data you want to study in order to solve a problem or meet an objective
- **Collect** the data from appropriate sources
- **Organize** the data collected by developing tables
- **Visualize** the data by developing charts
- **Analyze** the data collected to reach conclusions and present results

Using The DCOVA Framework Helps You To Apply Statistics To:

- Summarize & visualize business data
- Reach conclusions from those data
- Make reliable predictions about business activities
- Improve business processes

Understanding

Data Collection

Formulating

New Hypothesis

Testing through

Experimentation

