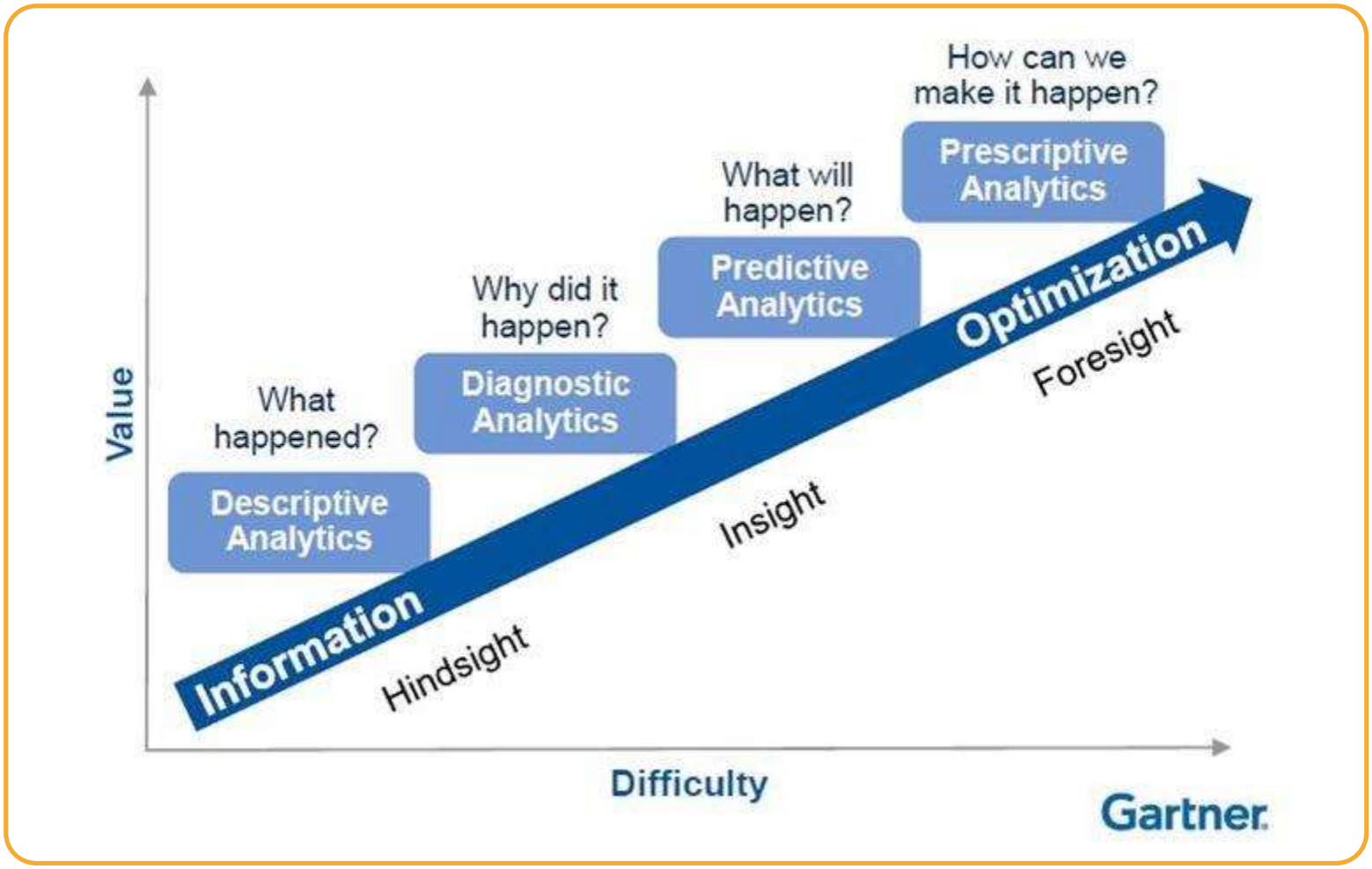
Data Analytics Using Tableau

(A Step Towards Data Science)

WHAT IS DATA ANALYTICS?

- Data Analytics:
  - *'Is a process of inspecting, cleansing, transforming and modelling data with the goal of discovering useful information, suggesting conclusions and supporting decision-making'. -Wikipedia*
  - *'Leverage data in a particular functional process (or application) to enable context-specific insight that is actionable'. -Gartner*
  - *'Is using our current data sets to extract useful information to support advanced decision making'. –ATC (American Tower Corporation)*
- Data Visualisation:
  - Provides a visual context of data using dashboards
  - Is often a single-page, real-time user interface and is the graphical presentation of your data

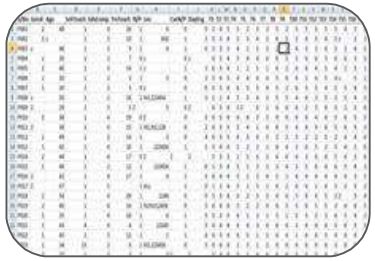
DATA ANALYTICS CAPABILITIES



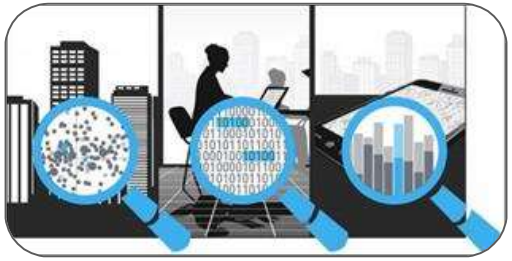
DATA ANALYSIS

- Data analysis is the process of:
  - **Compiling** and **analysing** data for decision-making, and
  - Generating **real-time** outcomes.

Raw data



Compiled data

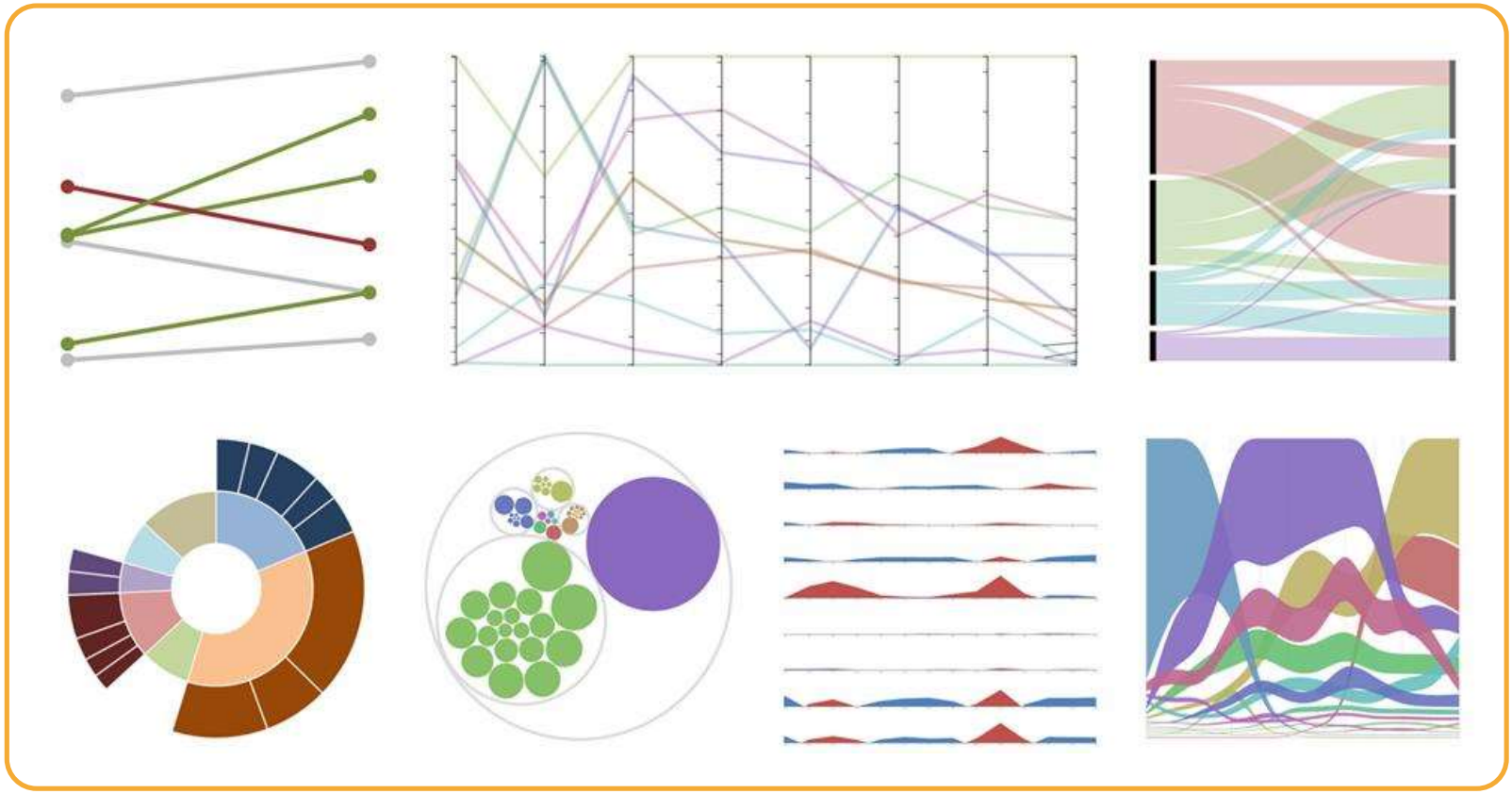


Insights

WHY DATA VISUALISATION ?

- The **textual** nature of data can be improvised by adding **visualisation** methods.

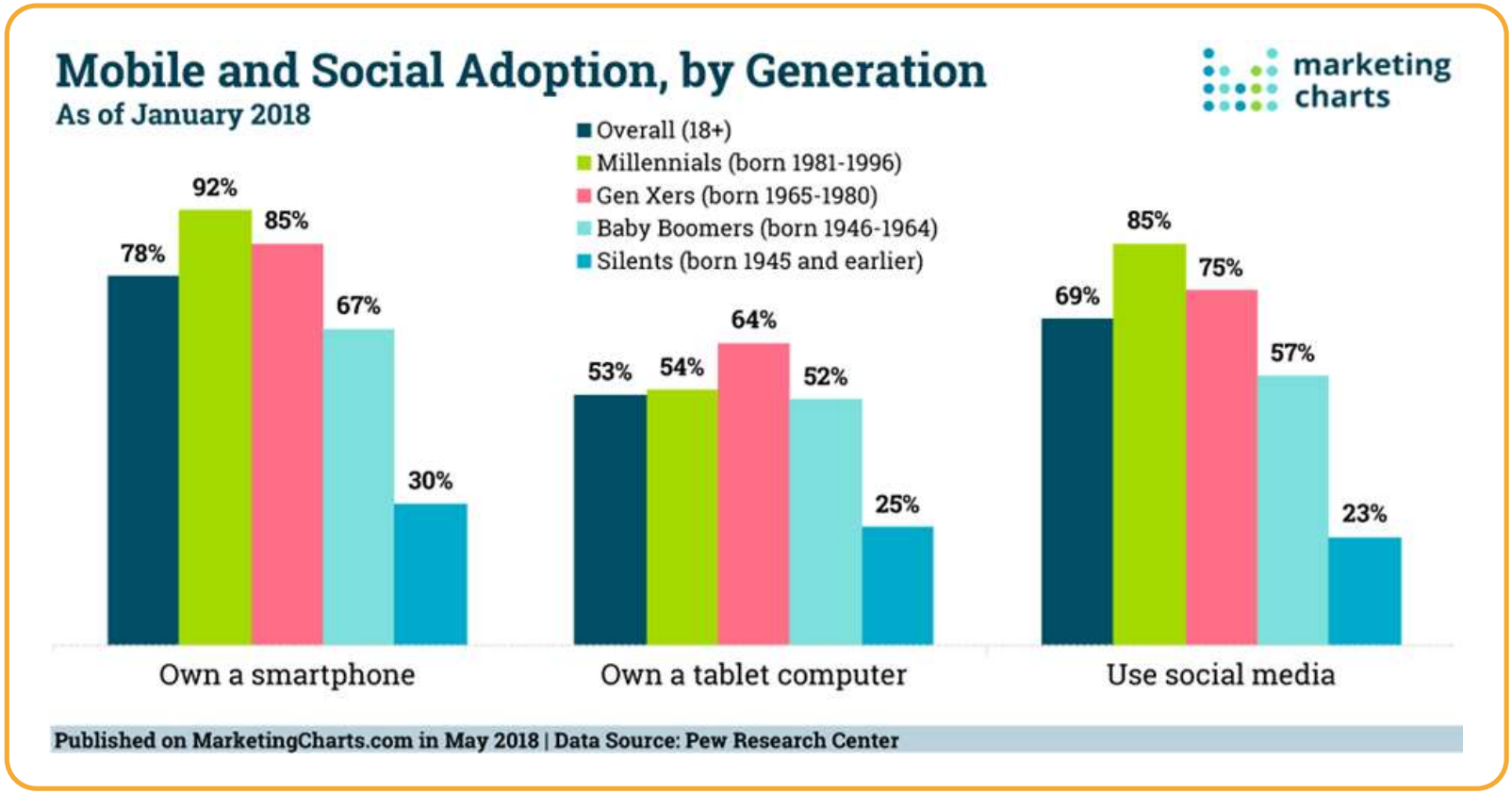
HUMANS ARE GOOD AT UNDERSTANDING VISUAL PATTERNS



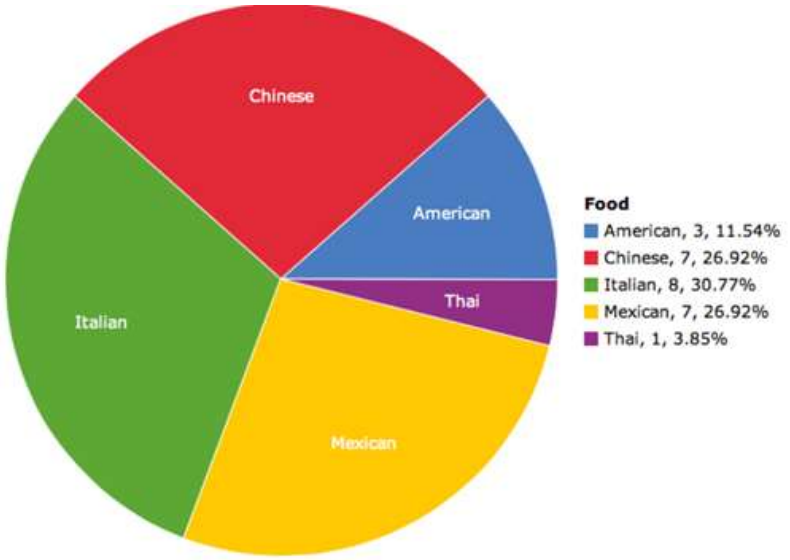
WHAT INSIGHTS CAN YOU GET FROM THE TEXT GIVEN BELOW?

There has been tremendous growth in the use of the mobile phones in India. It is reported that the India's telecommunication market is the second largest in the world. The mobile phones are available to the people right from the age of 12 years. The mobile phone technology has brought the world closer. It provided great convenience in communication among people by way of either calling or texting. Now, the mobile phones are coming up with variety of features like internet access, sending e-mails, games, access to social networking sites like face-book, listening to music, playing radio, reading books, dictionary and so on. The mobile phones are also used to overcome the feeling of loneliness. The majority of the users are in the age group of 15 to 25 years. The contacts are established instantly with the help of mobile phones which was not possible earlier. However, though the mobile phone provided many advantages, it has also caused some problems also. Some people are using the mobile phones so excessively that it assumes the form of addiction. The use of mobile phones has reduced the face to face communication. It is observed that the people sending text messages while talking to others. Even the visitors, guests are kept waiting till the mobile phone use is over. The students are using mobile phones for playing games, sending messages, calling even when the class is in progress. The mobile phones are used at places like hospitals, judicial courts, petrol pumps where their use is banned. The mobile phone use during driving is commonly observed which may increase the chances of involving in accidents. The use of mobile phone while driving can distract attention of the driver visually, physically and cognitively. Earlier studies have shown that various personality traits like neuroticism, extraversion, psychoticism, etc. and mobile use have some relation to each other. The gender may also play some role in high mobile phone use. The provision of the additional features like internet, music, radio, etc. may be resulting in excessive use of mobile phones. It is, therefore, thought to study the various aspects of mobile phone use including gender role.

WHAT INSIGHTS CAN YOU GET FROM
THE CHARTS GIVEN BELOW?

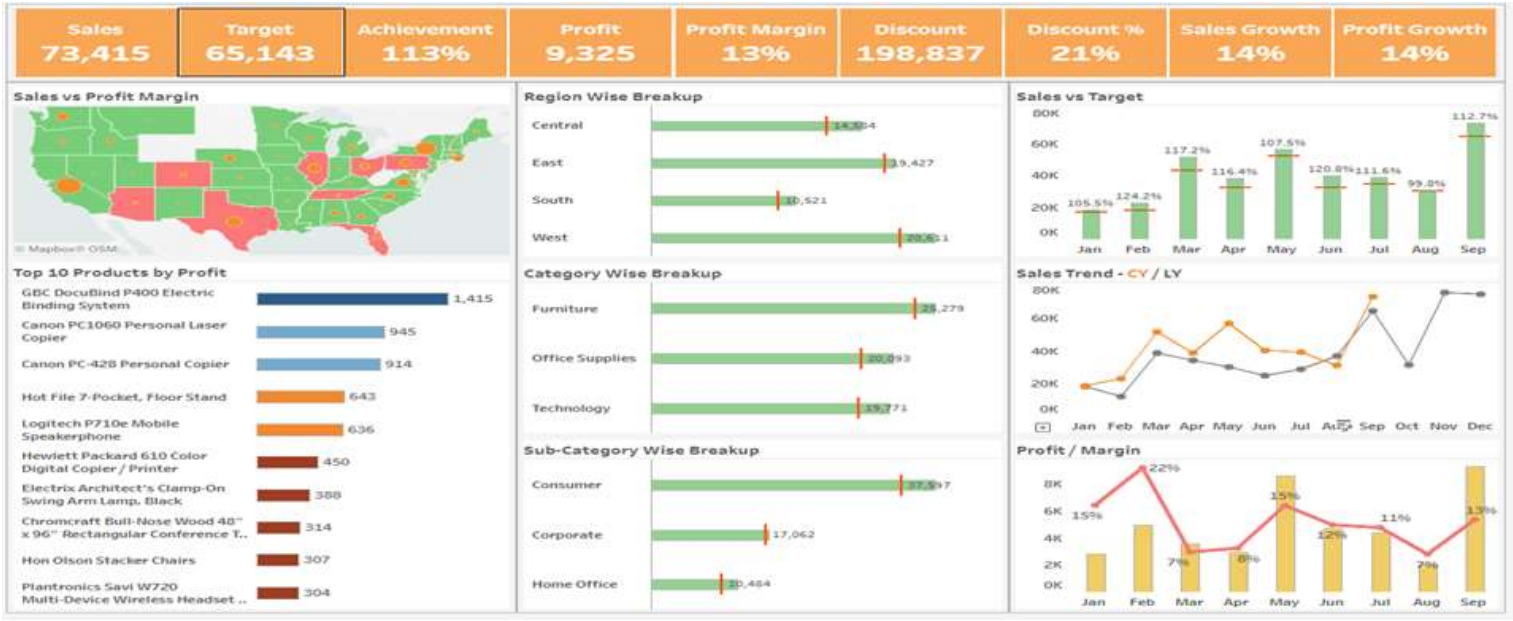


DATA VISUALISATION IS THE BEST WAY TO CONVEY CONCEPTS



IT PROMPTS CREATIVE DATA EXPLORATION

Financial Overview Dashboard



Data visualisation

Data visualisation deals with **the presentation of** your data in the form of charts, pictures or graphs to the **appropriate people** at the **correct time** in order to enable them to **gain insights** most effectively.

Data visualisation

- Provides **insights** into **complex** data sets
- Communicates the **key** aspects of the data sets in a meaningful way
- Provides the **required** information in an easy way
- Is the best platform for **presentation**

How Will You Distinguish Parameters in Visualisation ?

- Color
- Shape
- Size
- Proximity

> *'A tool is only as good as the user'*
> Hence, let's focus on various data visualisation **techniques**.
>
> **- Anonymous**

DATA VISUALISATION TOOLS

Tableau

QlikView

FusionCharts

Highcharts

DataWrapper

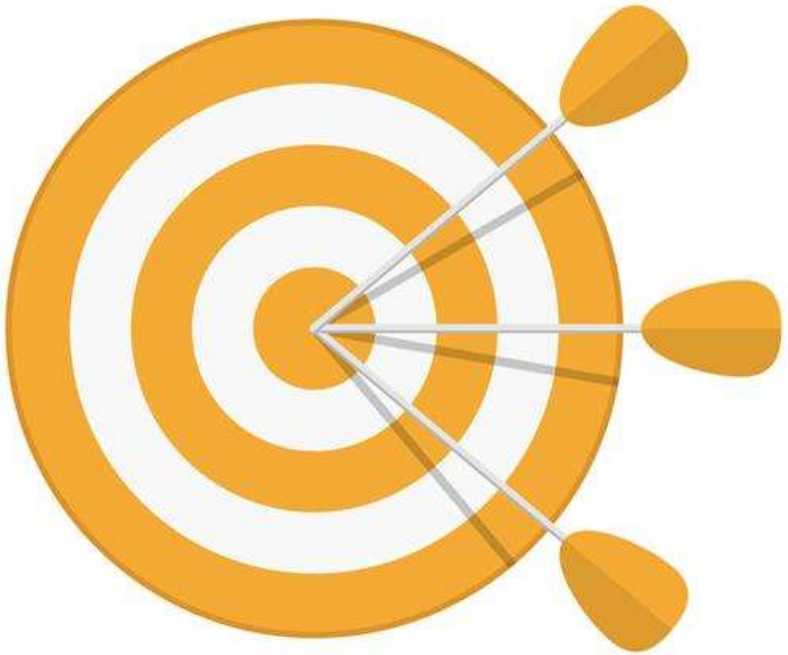
Power BI

Tableau

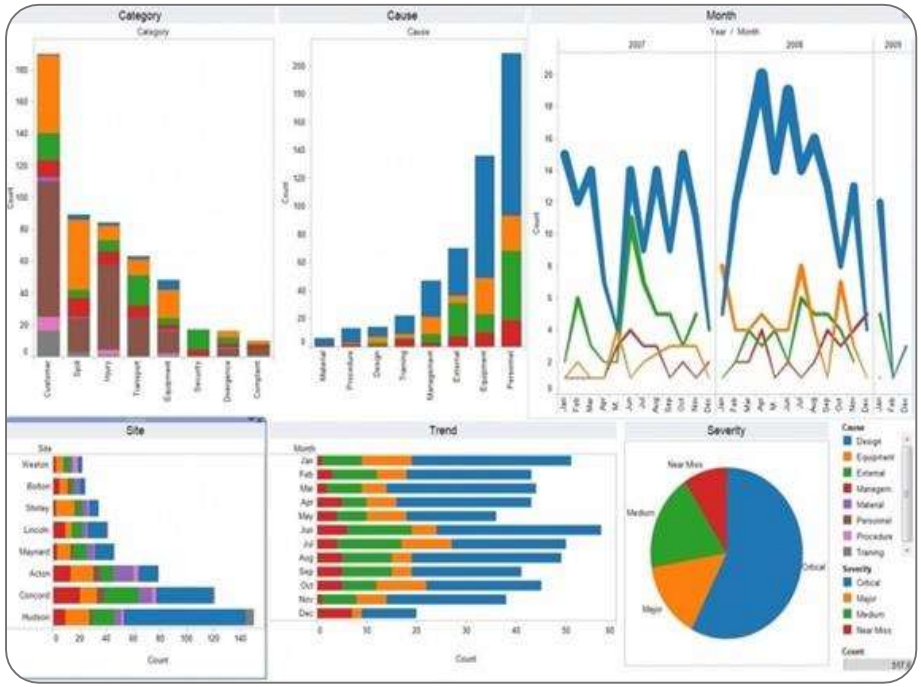
It is a **data connect** and **data analysis** tool used for visualisation.

Key Features

- Tableau is a **business intelligence** and **data visualisation** tool.
- It is easy to learn: Has a simple **drag**-and-**drop**-based interface.
- It has interactive dashboards.
- It can share and interact.
- Its **implementation** is easy and enables **real-time** collaboration with fellow team members.
- It enables smart data connect over **Cloud**.



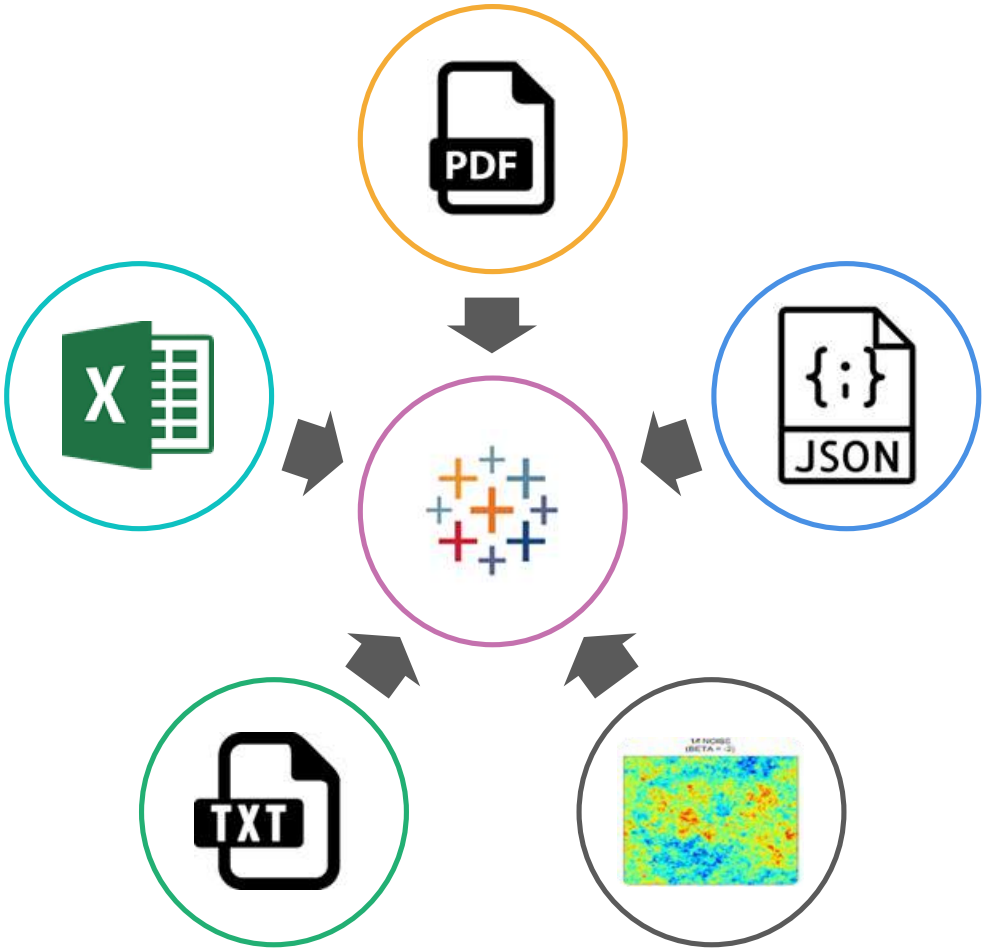
VISUALISATION WITHOUT CODING



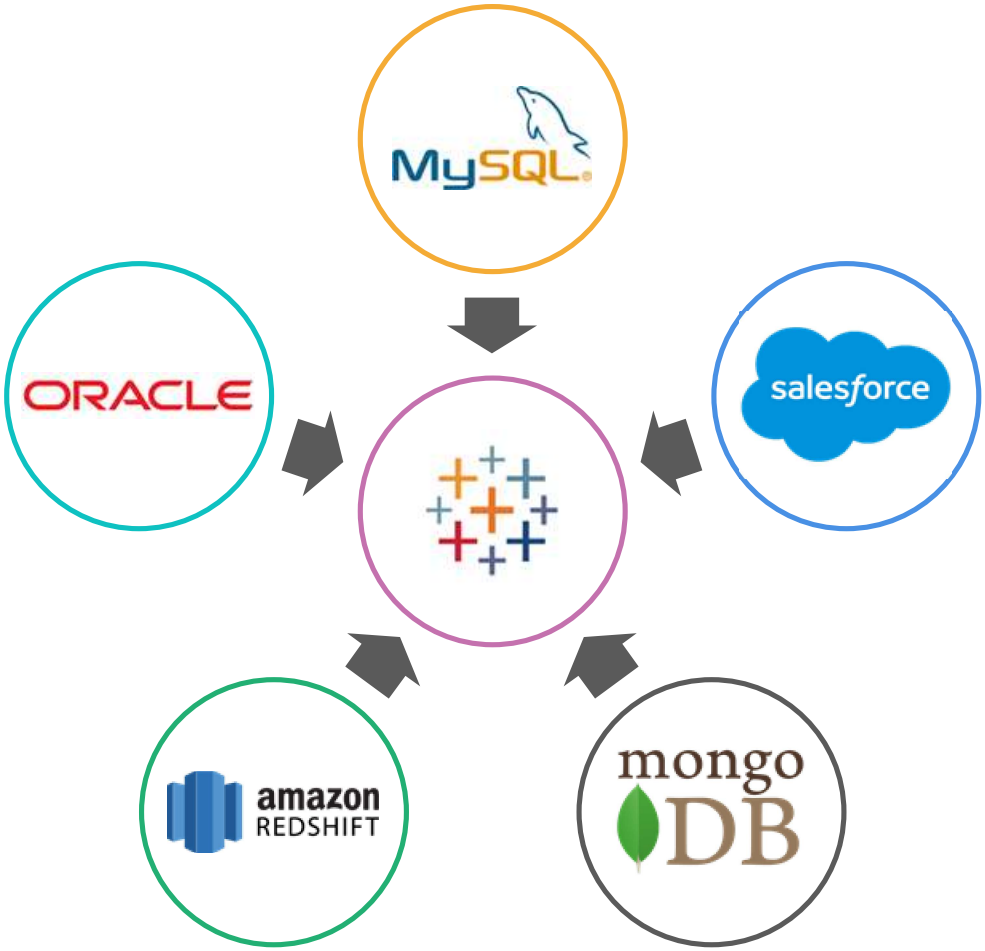
A PLETHORA OF COMPANIES USE TABLEAU FOR BI

FEATURED COMPANIES THAT USE TABLEAU

EASY DATA INTEGRATION: FILES



EASY DATA INTEGRATION: SERVERS



TYPES OF TABLEAU

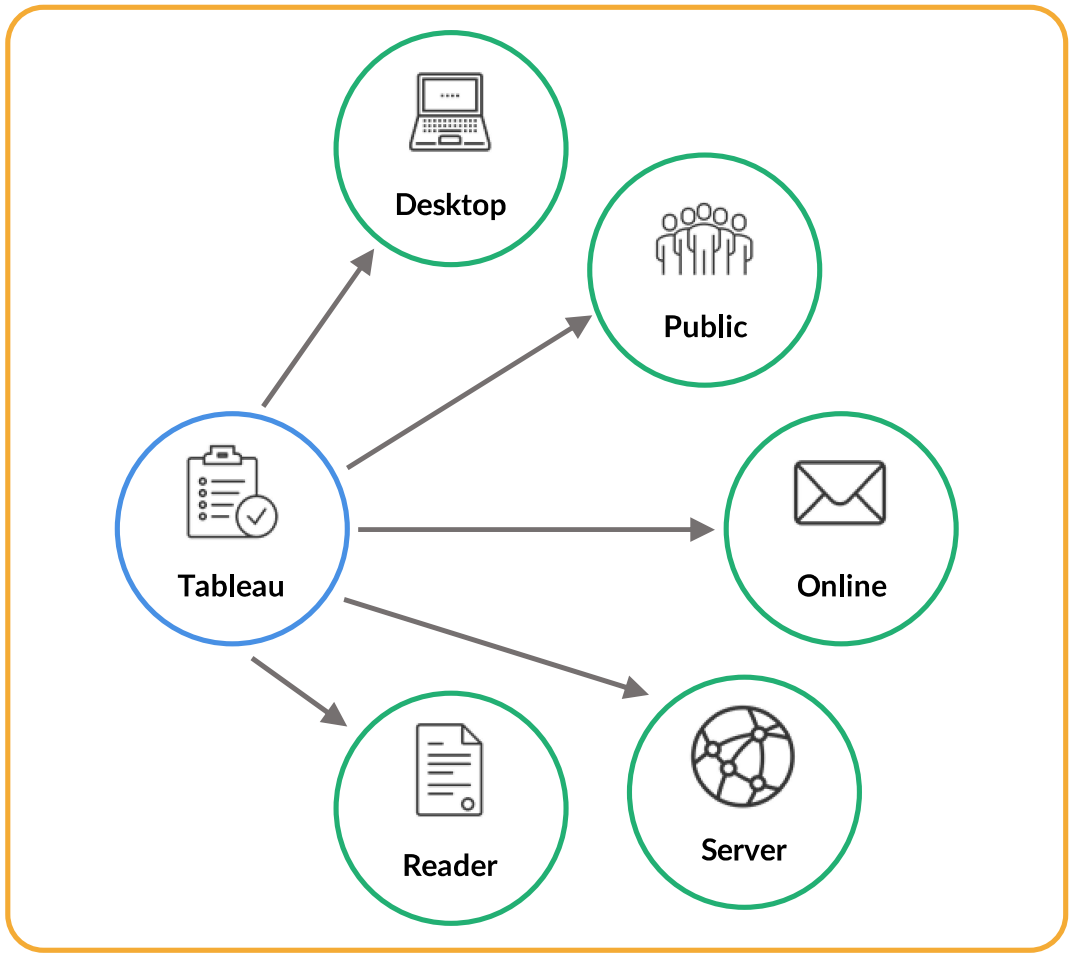


TABLEAU VS EXCEL

Tableau	Excel
Data Visualization Tool	Spreadsheet
High Performance	Moderate Performance
Custom Charts	Limited Charts
Dashboards can be created in minutes	Time consuming tool to build dashboards
Can connect to R and Python	No integration to R and Python
No limit on amount of data	Data limited to 1 Mn rows only

TABLEAU VS POWER BI

Parameters	Tableau	Power BI
Objective	It's a business intelligence for generating the reports with high flexibility	It's a data analytics tool to derive the insights out from the business
Data Sources	Access to numerous data sources and servers	Limited access the servers and data sources
Data Capacity	Billions of ros of data possible in the Tabeau as it works on the columnar based structure	Each workspace has the capacity to handle the data of 10 GB, and if the data is more it has to be in the cloud or directquery from datasources
Performance	Better Performance	Can handle smaller data and moderate performance
Pricing	Expensive. You need to pay more if connected to third party applications	It is very cheap as compared to the Tableau

EXPLORATORY VS EXPLANATORY ANALYSIS

- Exploratory analysis:
  - Exploratory analysis is often the first step of data analysis. Here we get familiar with data, ask questions, visualise the data in a number of forms, look for relationships between the variables, look for outliers, patterns and trends in data. The output of exploratory analysis is usually only for us, the data analysts.

- Explanatory analysis :
  - Explanatory analysis is what happens when we have identified some interesting observations in the data. We then create the visuals to present our findings. The output of an explanatory analysis is generally for the public.