Microsoft Power BI

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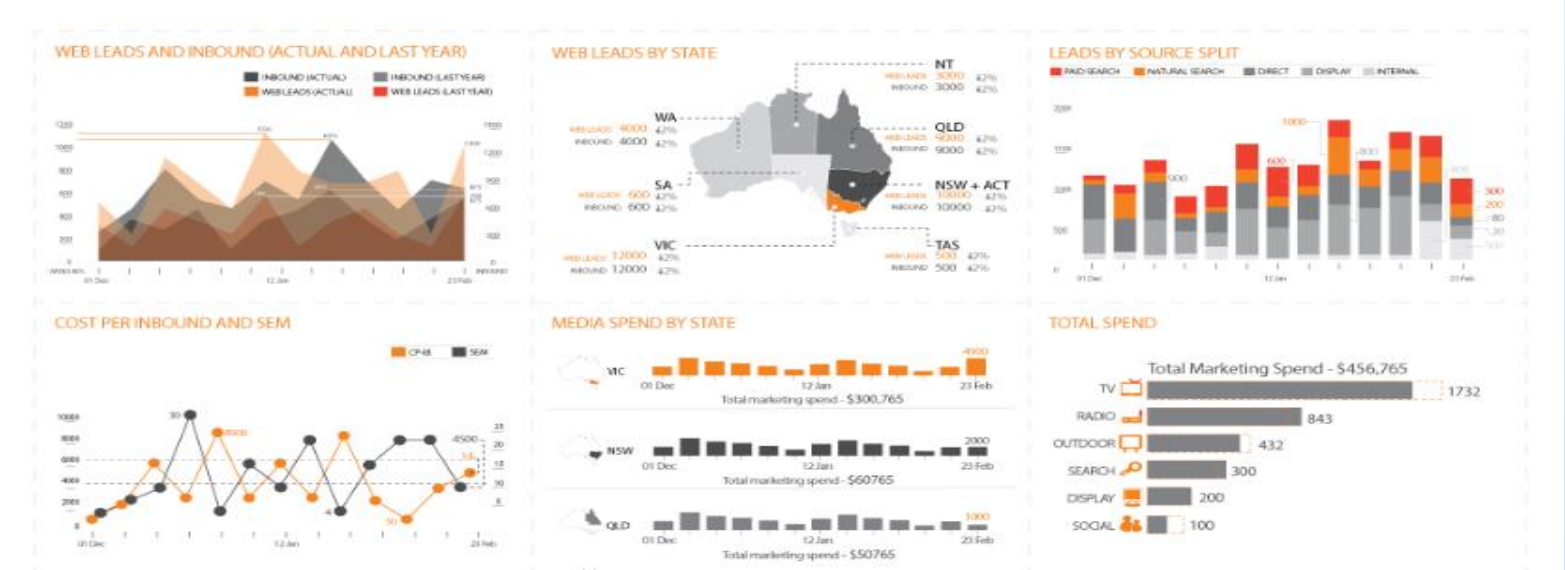
Visual Analytics

- Raw Data…

	A	K	L	M	N	O	P	Q
1	Row ID	Product Sub-Category	Product Container	Product Name	Product Base Margin	Region	State or Province	City
2	18606	Labels	Small Box	Avery 49	0.36	Central	Illinois	Addison
3	20847	Pens & Art Supplies	Wrap Bag	SANFORD Liquid Accent Tank-Style Highlighters	0.54	West	Washington	Anacortes
4	23086	Paper	Small Box	Xerox 1968	0.37	West	Washington	Anacortes
5	23087	Scissors, Rulers and Trimmers	Small Pack	Acme® Preferred Stainless Steel Scissors	0.56	West	Washington	Anacortes
6	23088	Telephones and Communication	Small Box	V70	0.59	West	Washington	Anacortes
7	23597	Paper	Small Box	Xerox 194	0.37	West	Washington	Anacortes
8	25549	Office Machines	Jumbo Drum	Canon S750 Color Inkjet Printer	0.38	West	Washington	Anacortes
9	20228	Chairs & Chairmats	Jumbo Drum	Global Troy Executive Leather Low-Back Tilter	0.6	West	California	San Gabriel
10	19483	Paper	Small Box	Xerox 1930	0.36	West	California	San Gabriel

- Visualizations



Leaders.-

Easy Powerful Fast

Agenda

- Business Intelligence (BI) Concepts
- Microsoft Power BI (MSPBI) introduction
- Connecting Power BI with Different Data sources
- Power Query for Data Transformation
- Data Modelling In Power BI
- Reports in Power BI
- Reports & Visualization types in Power BI
- Dashboards in Power BI
- Data refresh in Power BI
- Projects: End to End (Data Modelling & Visualization)
- Interview Questions

Business Intelligence (BI) Concepts

What is Business Intelligence ?

BI(Business Intelligence) is process of converting raw data into meaningful information. A set of process, architecture and technologies that drives profitable business actions.

BI(Business Intelligence) is a methods of collecting, storing and analysing data from business operations or activities to optimize performance.

BI(Business Intelligence) has a direct impact on the organizational strategic and operational business decision. It impacts the revenue and financial model of the business.

Importance of Business Intelligence ?

- KPI (Key Performance Indicators)
- Process Benchmarking
- Driving Sales
- Business Problems
- In Demand
- Job Abundance

Data Warehousing & Business Intelligence ?

Data Warehouses convert unwieldy data from multiple sources into an easily understandable format that is both user friendly and consumable with little or no modification.

Most **business intelligence** applications use data collected from a **data warehouse**, and the concepts of BI and DW together known as BI/DW. Data warehousing helps in achieving a **successful BI program** by facilitating several key aspects of reporting and data analytics.

Importance of Data Warehousing

- Enhance **Business Intelligence**.
- Promises the **data quality** before it is used for reporting.
- Easier and more efficient **decision-support** query writing.
- Enable decision-makers and business users to have **timely access to the data**.

Tools and Technologies in Business Intelligence

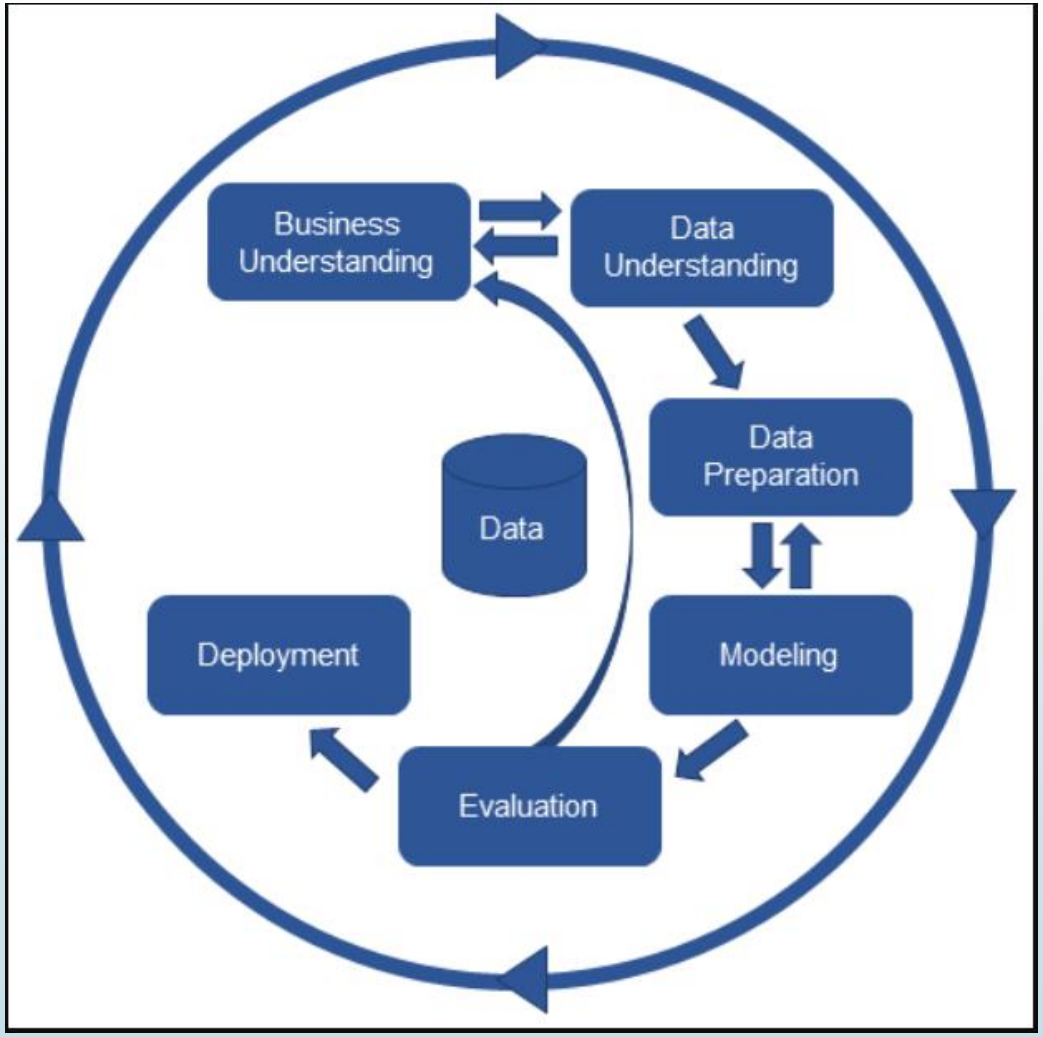
Business Intelligence (BI) tools are tools which utilize a set of methodologies and technologies to prepare, present and help analyze data. Through this process, data is turned into actionable business information which helps decision makers and end users to make more effective data-driven decisions.

The set of **methodologies and technologies** used by business intelligence is widely diverse depending on the purpose of the solution.

How to choose Business Intelligence(BI) tools:

- Availability and Usage
- Easy to learn and Use
- Quality of Data Visualization
- Cost and ease of setup

BI Project Execution : CRISP-DM



Microsoft Power BI (MSPBI) Introduction

Microsoft Power BI

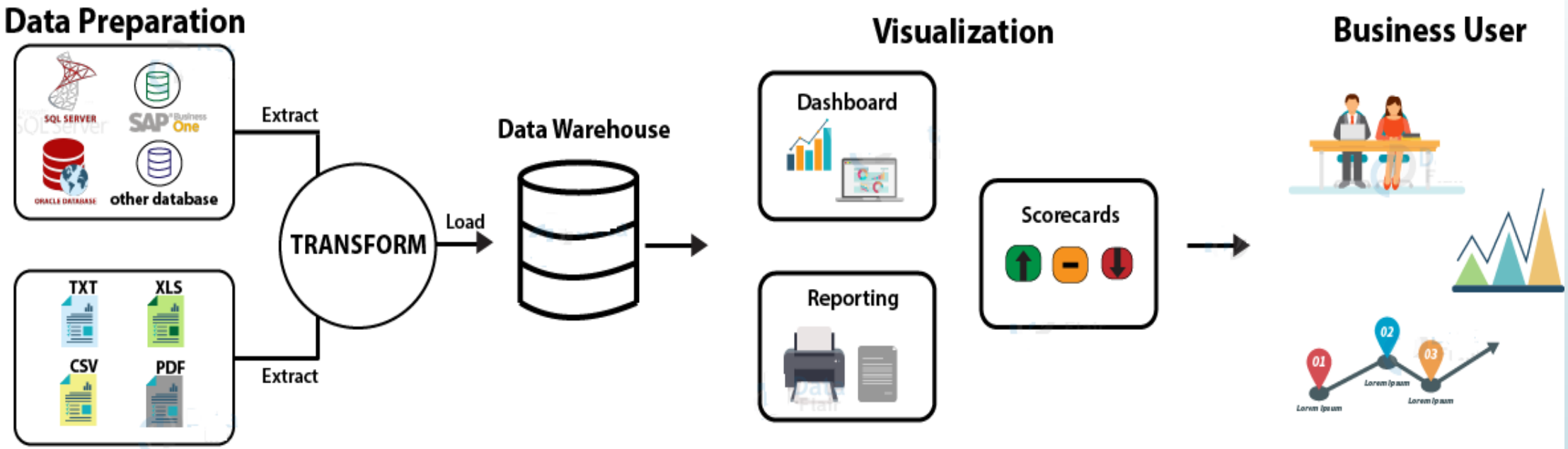
Power BI is **business analytics solution** that lets you visualize the data and share the insights to the concern stakeholders and the business owners.

Power BI Components:

- Power BI Desktop
- Power BI service *(SaaS –Software as a Service)*
- Power BI Mobile Apps

Power BI begins by connecting to data sources and building a report in Power BI Desktop. You then publish that report from **Power BI Desktop** to the Power BI service, and share it so end users in the **Power BI Service** and **Mobile Devices** can view and interact with the report. This workflow is common, and shows how the three main Power BI elements complement one another.

Power BI Architecture



Power BI Process

- Data Connection
- Data Transformation
- Data Modelling
- Data Visualization
- Data Reports

Power BI Process – Data Connection

You can talk to any data source with highly simplified Power BI interface. Power BI can connect to any data source to bring meaningful insights to the end user.

It is simple to import any custom file into Power BI

Connecting data from multiple data source can be achieved by anyone who is new to Power BI.

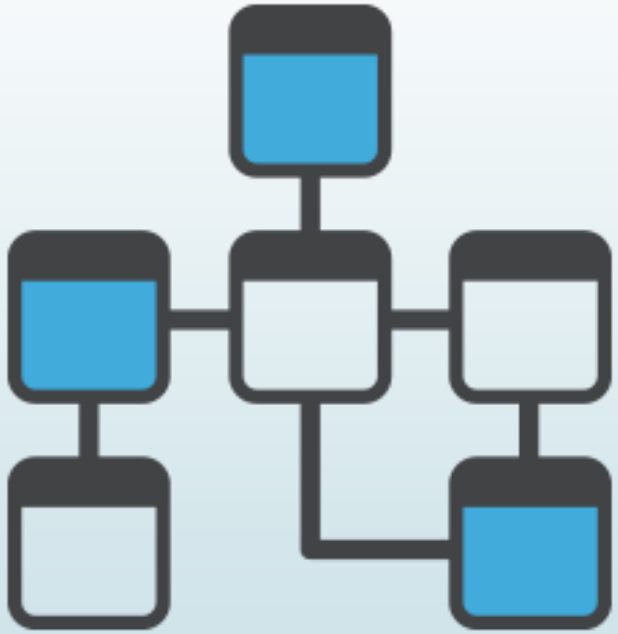
Power BI Process – Data Transformation

- Post data loading, it should undergo pre-processing as per the requirement.
- Process is known as Data Shaping or Data Transformation.
- Involves renaming tables and columns, changing the type of data (number/text), modifying rows and so on..

Power BI Process – Data Modelling

- Enhance the data to get more accurate the insights and analytics.

- Achieved by working adding ample number of calculations, hierarchies, measures, relationship etc.



Power BI Process – Data Visualization

- Heart of Power BI
- Playing with variety of Visualization types.
- Plethora of visual tools and custom visuals.
- Business user whip up good analytics without writing a single line of code.

Power BI Process – Data Reports

- Reports can be published and exported securely.
- Automatic data refresh can be setup which provides almost real time analytics and results.
- Various roles and authentication can be assigned as per the indented user.

Power BI Process – Summary

Create Publish Share

BI Tool and Comparison

		
ETL (Extract, Transform, Load	☺	☺
Forecasting	☺	☺
Multiple Categories Comparison	☺	☹
Offline Iteration	☺	☹
Missing Outliers	☹	☺

Power BI Desktop - Components

Datasets

Reports

Visualizations

Dashboard

Tiles

Power BI - Installation

Power BI Roles

- **Model Author**

- **Report Author**

- **End User**

Installation - Power BI Desktop

Thank You

Happy Learning