

Power BI Training Session #1

Let's Get Started

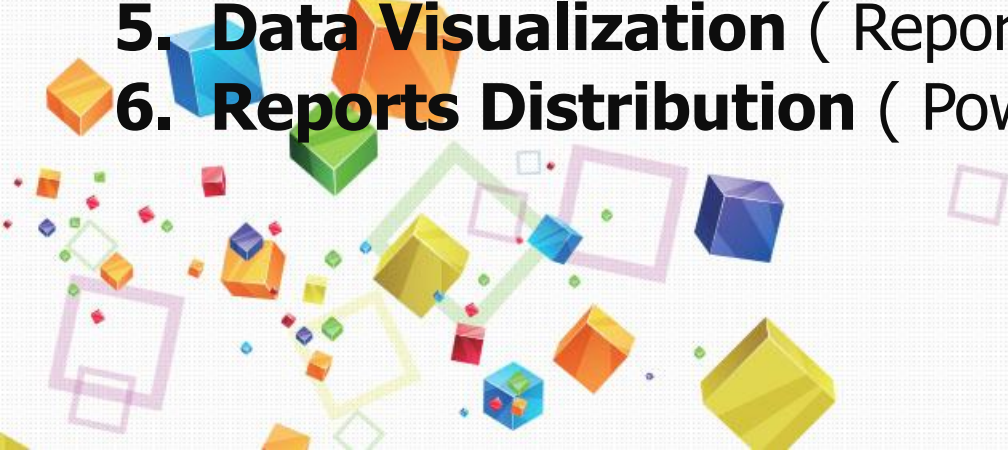
Let us Have A Quick Introduction

- Just Your Name, Total Experience
- Have You Worked on Microsoft Power BI Earlier ?
- Expectation from this Course !



This is a Practical Hands on Workshop based course, to learn Data Analytics and Business Intelligence (BI) with Microsoft Power BI Desktop

- 1. Understanding Business Intelligence (BI), Self Service BI , Data Analytics & Data Visualization**
- 2. Introduction to Microsoft Power BI**
- 3. Data Discovery** (Connecting & Shaping Data with Power BI Desktop)
- 4. Data Modelling** (Creating Relationship, Star Schema , DAX)
- 5. Data Visualization** (Reports , Dashboard)
- 6. Reports Distribution** (Power BI Services)



Business Intelligence (BI), Self Service BI, Data Analytics & Data Visualization Introduction



BUSINESS INTELLIGENCE

- Business Intelligence (BI) refers to **technologies, applications and practices** for the **collection, integration, analysis**, and **presentation** of business information
- The Purpose of Business Intelligence is to support **Better Business Decision Making** via **Data Analytics** .
- **Data analytics** is the process of examining data in order to find **valuable knowledge** and **actionable insights** from the Raw Data with the aid of specialized systems and software.

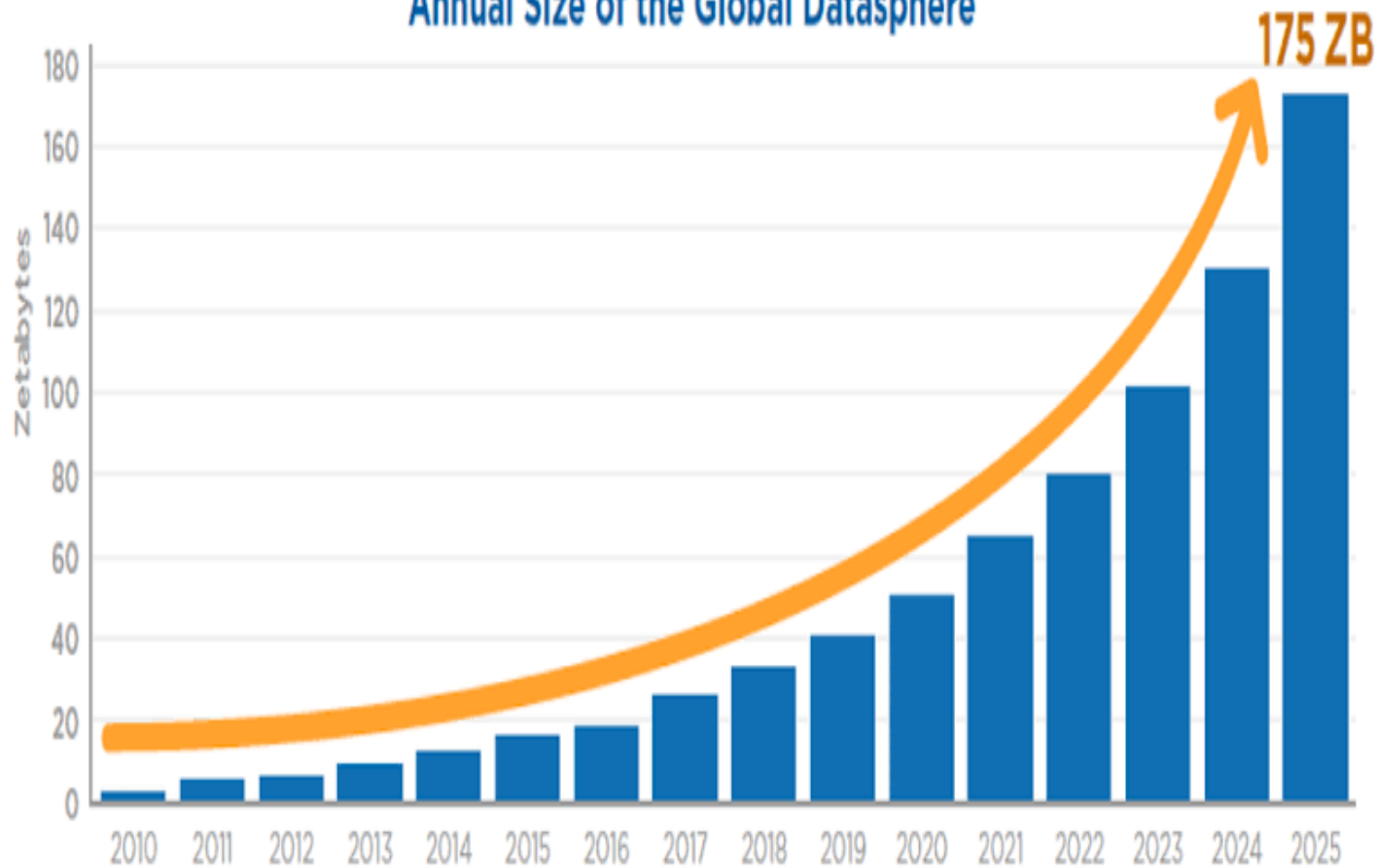


INTRODUCTION TO POWER BI

- In 2025 the world's data is expected to reach 175 ZB.
- Within these data are huge, unparalleled opportunities for human advancement. But to turn opportunities into reality, people need the power of data at their fingertips.
- Power BI is helping People Do Exactly This.



Annual Size of the Global Datasphere

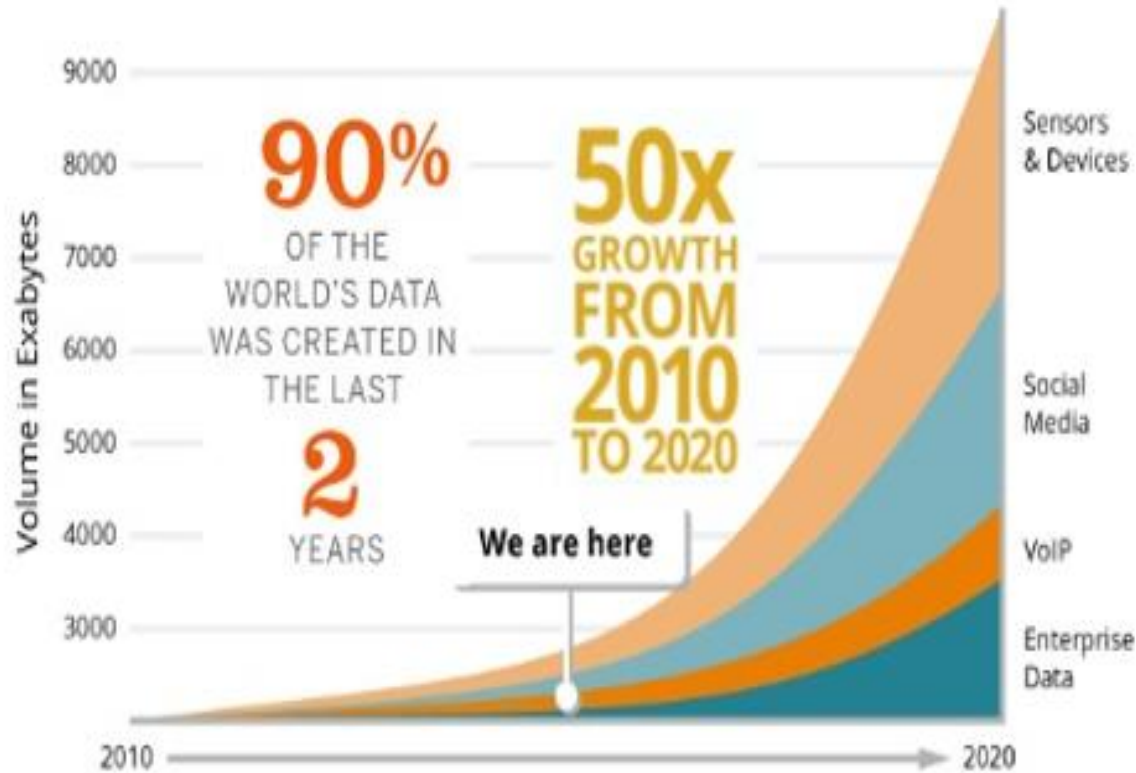


Source: Data Age 2025, sponsored by Seagate with data from IDC Global DataSphere, Nov 2018

WHERE IS DATA COMING FROM?

BIG IN GROWTH, TOO.

1 exabyte (EB) = 1,000,000,000,000,000 bytes



SELF SERVICE BI

- With self-service bi, business users are able to filter, segment, and analyze their data like never before, **without the in-depth technical knowledge** that most analytical systems have required in the past.
- **Identify Your Users** - Who are your “**casual users**,” such as employees and managers, and who are your “**power users**” like data analysts , data scientists and software developers.
- Casual users just want to pop in and pull some reports or view their KPI dashboard.
- The power users group – which is really just 10% of your users at best who have that training, who can program, programmatically access data **really do need self-service.**



WHY IS DATA ANALYTICS & SELF SERVICE BI IMPORTANT?

- In 2020 the world's data is expected to reach 45ZB.
- Within these data are huge, unparalleled opportunities for human advancement. But to turn opportunities into reality, people need the power of data at their fingertips.
- Microsoft PowerBI is helping People Do Exactly This.



How Big is Big?

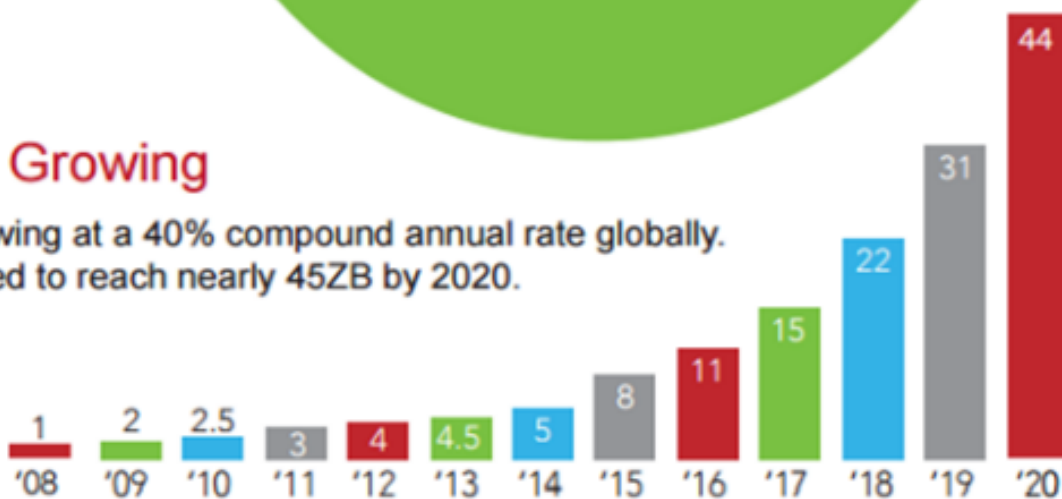
1,000 gigabytes =
1 terabyte

1 million terabytes =
1 exabyte

1 billion terabytes =
1 zettabyte

And It's Growing

Data is growing at a 40% compound annual rate globally.
It is expected to reach nearly 45ZB by 2020.



Data in zettabytes (ZB)

Source: Oracle 2012

Business Tools



(k)

What is Visual Analytics And Why ?

“Visual analytics is the representation and presentation of data that exploits our visual perception abilities in order to amplify cognition.”

- Andy Kirk, author of “Data Visualization: a successful design process”



Please Count The Total 9 in the below data set !

3	3	0	3	0	1	8	7	6	8	2	1	4	0	3	8	3	7	7	2	0	5	2	3	2	7	0	2	0
7	1	4	6	0	2	1	3	2	7	6	0	2	5	6	3	2	5	7	6	3	3	0	2	0	3	0	7	2
8	7	5	7	2	8	3	8	7	7	8	2	0	7	7	5	2	3	1	1	5	6	3	8	4	7	8	2	0
0	5	0	5	1	6	1	7	5	6	8	0	4	4	6	7	4	7	1	4	0	0	8	4	4	3	0	3	2
2	4	3	1	3	5	4	9	5	0	7	6	0	7	4	3	1	8	2	7	3	4	6	0	2	4	8	2	3
8	6	2	2	6	5	4	6	7	0	7	6	0	0	3	9	0	2	4	7	1	7	2	3	3	5	8	7	0
0	8	4	5	1	3	1	7	6	4	5	4	1	2	4	5	3	3	5	4	9	6	7	7	6	3	4	2	5
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0	5	2	4	1	5	3	3	1	5	5	1	4	0	1	6	4	3	3	9	8	8	3	4	6	8	4	8	6
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1	0	2	2	7	6	3	3	0	8	8	0	3	1	8	8	1	2	1	7	5	2	9	3	5	8	3	2	5

Please Count Now !

3	3	0	3	0	1	8	7	6	8	2	1	4	0	3	8	3	7	7	2	0	5	2	3	2	7	0	2	0
7	1	4	6	0	2	1	3	2	7	6	0	2	5	6	3	2	5	7	6	3	3	0	2	0	3	0	7	2
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8	6	2	2	6	5	4	6	7	0	7	6	0	0	3	9	0	2	4	7	1	7	2	3	3	5	8	7	0
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0	1	7	1	5	9	1	4	2	8	7	3	7	1	4	5	1	8	7	8	0	5	1	7	0	5	8	8	1
2	8	5	2	1	2	8	7	7	6	2	5	6	2	6	4	1	5	1	6	1	2	1	1	0	5	6	4	0
2	1	1	7	7	2	0	0	1	8	7	0	2	9	0	2	8	5	7	8	4	6	0	6	5	0	7	1	2
0	5	2	4	1	5	3	3	1	5	5	1	4	0	1	6	4	3	3	9	8	8	3	4	6	8	4	8	6
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1	0	2	2	7	6	3	3	0	8	8	0	3	1	8	8	1	2	1	7	5	2	9	3	5	8	3	2	5

Human Perception & Cognition

Humans Are Slow at Mental Math

24
X 86



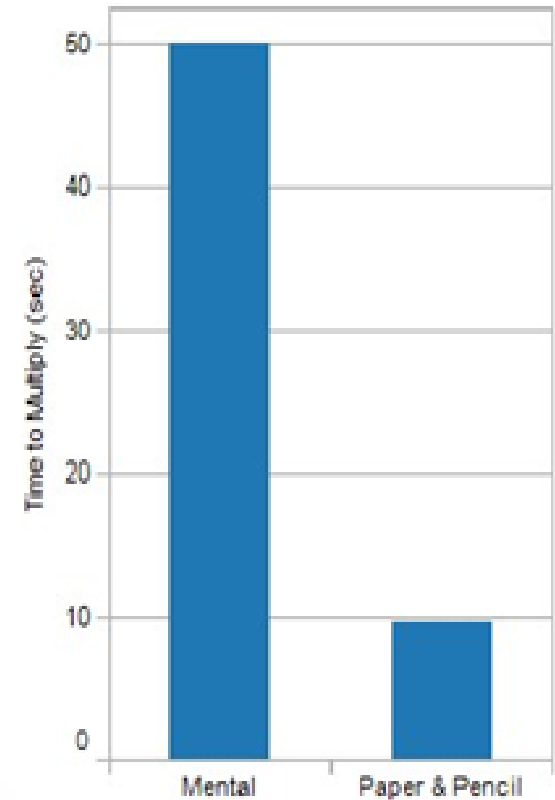
Using Pen & Paper

We're Faster When We Use the Pen

24
X 86

144
1920

2064



We're Much Faster When We Can "See" Data

Sales per Category/ Sub Category

Category	Sub-Category	Sales
Technology	Phones	330007.1
Furniture	Chairs	328449.1
Office Supplies	Storage	223843.6
Furniture	Tables	206965.5
Office Supplies	Binders	203412.7
Technology	Machines	189238.6
Technology	Accessories	167380.3
Technology	Copiers	149528.0
Furniture	Bookcases	114880.0
Office Supplies	Appliances	107532.2
Furniture	Furnishings	91705.2
Office Supplies	Paper	78479.2
Office Supplies	Supplies	46673.5
Office Supplies	Art	27118.8
Office Supplies	Envelopes	16476.4
Office Supplies	Labels	12486.3
Office Supplies	Fasteners	3024.3



We can make faster Business Decisions when we SEE the Analysis from different perspective



Sales Report for Superstore

Dates

1/3/2015 12/30/2018

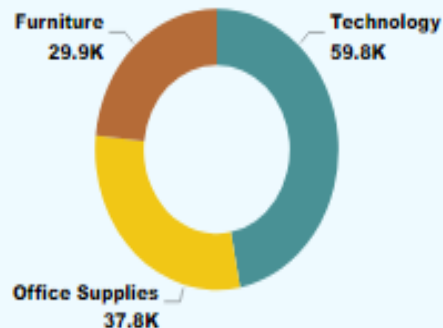
Region

East

Segment

Home Office

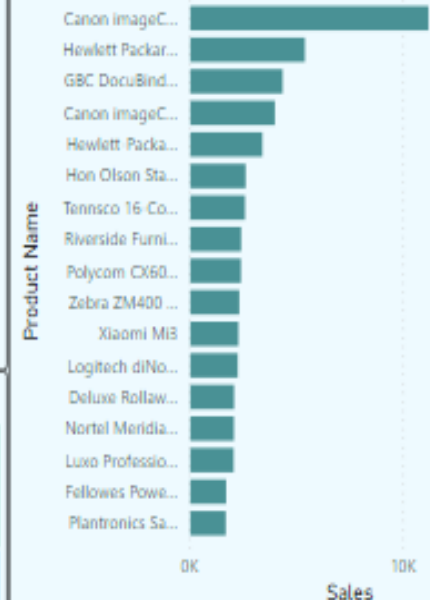
Sales by Category



Sales per Month



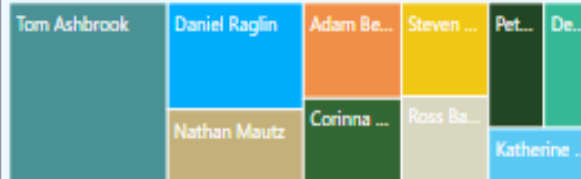
Sales by Product Name



127.5K
Sales

26.71K
Profit

Sales by Customer Name



Copiers 17

Supplies 15

Paper 336

Binders 303

Furnishings 193

Phones 164

The Cycle of Visual Analysis



Visualization Best Practices

- Representing data for humans
- Color
- Maps
- Creating Reports / Dashboards



Introduction To Microsoft Power BI



What is Microsoft Power BI

Power BI is a standalone Microsoft business intelligence product, which includes both desktop and web-based applications for loading, modeling, and visualizing data



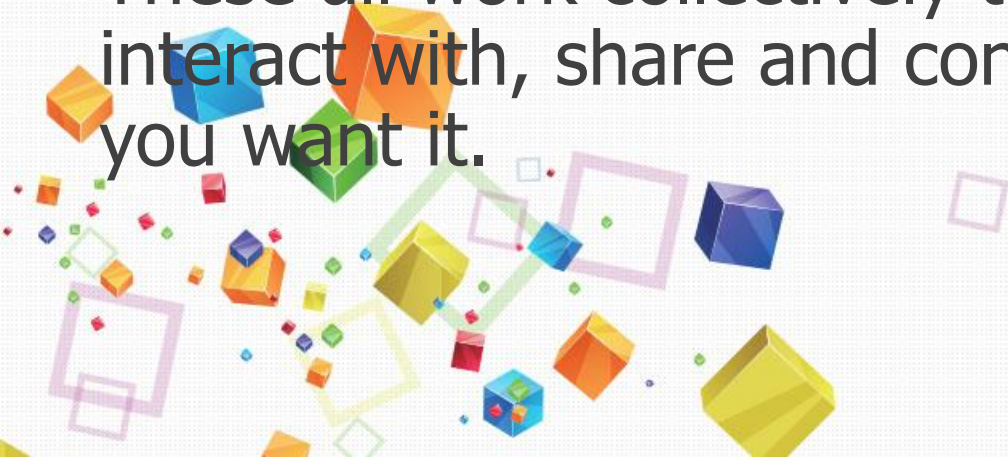
PRODUCTS OFFERED BY MICROSOFT

POWER BI

Power BI consists of three main Products :

- 1. Power BI Desktop** -- powerbi.microsoft.com
- 2. Power BI Service** -- app.powerbi.com
- 3. Power BI Mobile** -- mobile apps for iOS, Android, and Windows 10 mobile

These all work collectively to let you create, interact with, share and consume your data how you want it.



WHY POWER BI?

1. **Connect, transform and analyze *millions* of rows of data**

- Access data from virtually anywhere (database tables, flat files, cloud services, folders, etc), and create fully automated data shaping and loading (ETL) procedures

2. **Build relational models to blend data from multiple sources**

- Create table relationships to analyze performance across an entire data model

3. **Define complex calculations using Data Analysis Expressions (DAX)**

- Enhance datasets and enable advanced analytics with powerful DAX expressions

4. **Visualize data with interactive reports & dashboards**

- Build custom business intelligence tools with best-in-class visualization and dashboard features

5. **Power BI is the industry leader among BI platforms**

- Microsoft Power BI is intuitive, powerful and absolutely FREE to get started



Figure 1. Magic Quadrant for Analytics and Business Intelligence Platforms



Source: Gartner (February 2020)

Pricing

Flexible pricing to fit your budget

Indian Rupee (₹)

Author

Power BI Desktop

Free

DOWNLOAD FREE >

Share and collaborate

Power BI Pro

₹600.00

per user
per month

TRY FREE >

Scale large deployments

Power BI Premium

Capacity pricing

per node
per month

PLAN YOUR COSTS >



Request demo



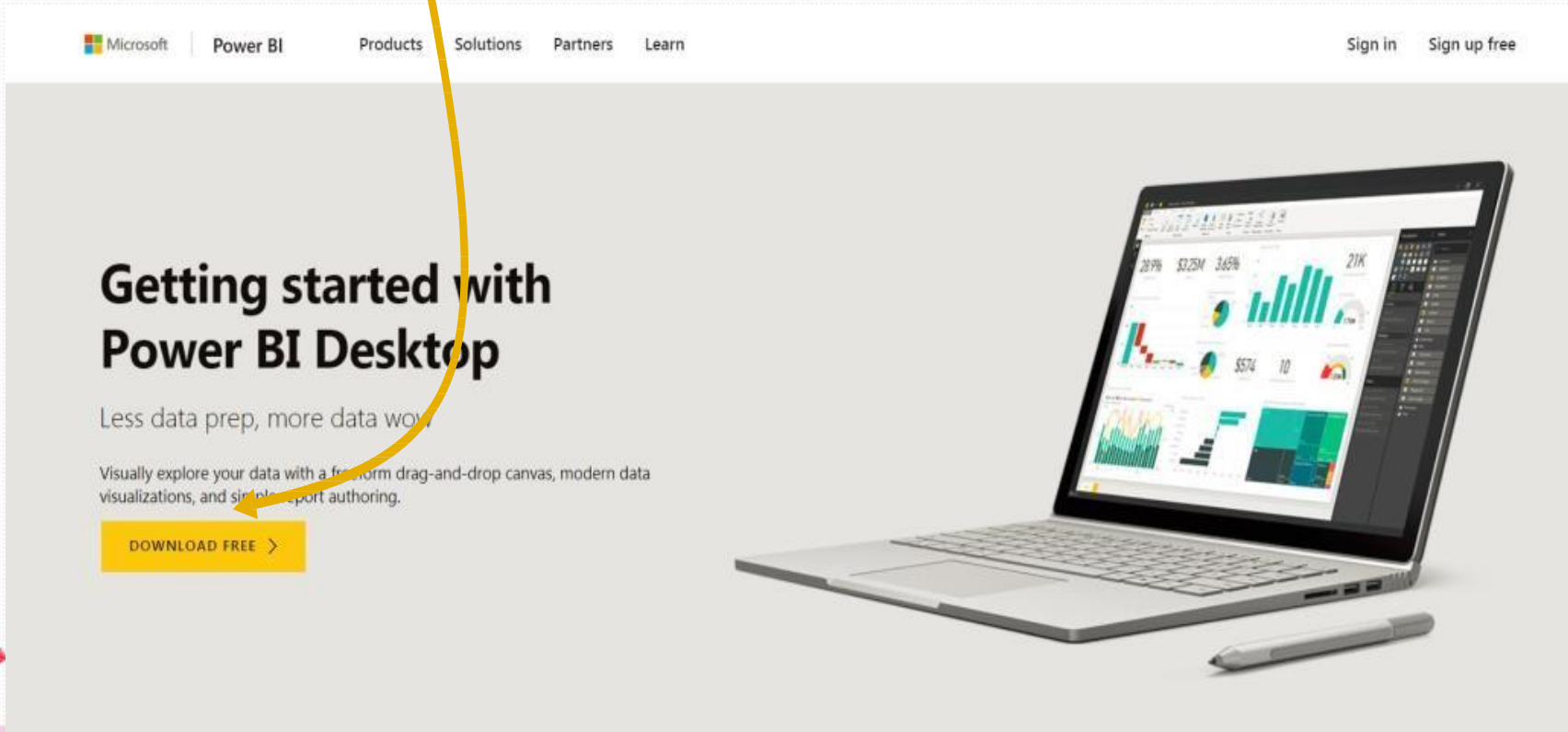
INSTALLING POWER BI DESKTOP

1. Head to **powerbi.microsoft.com** and click “Sign Up Free”



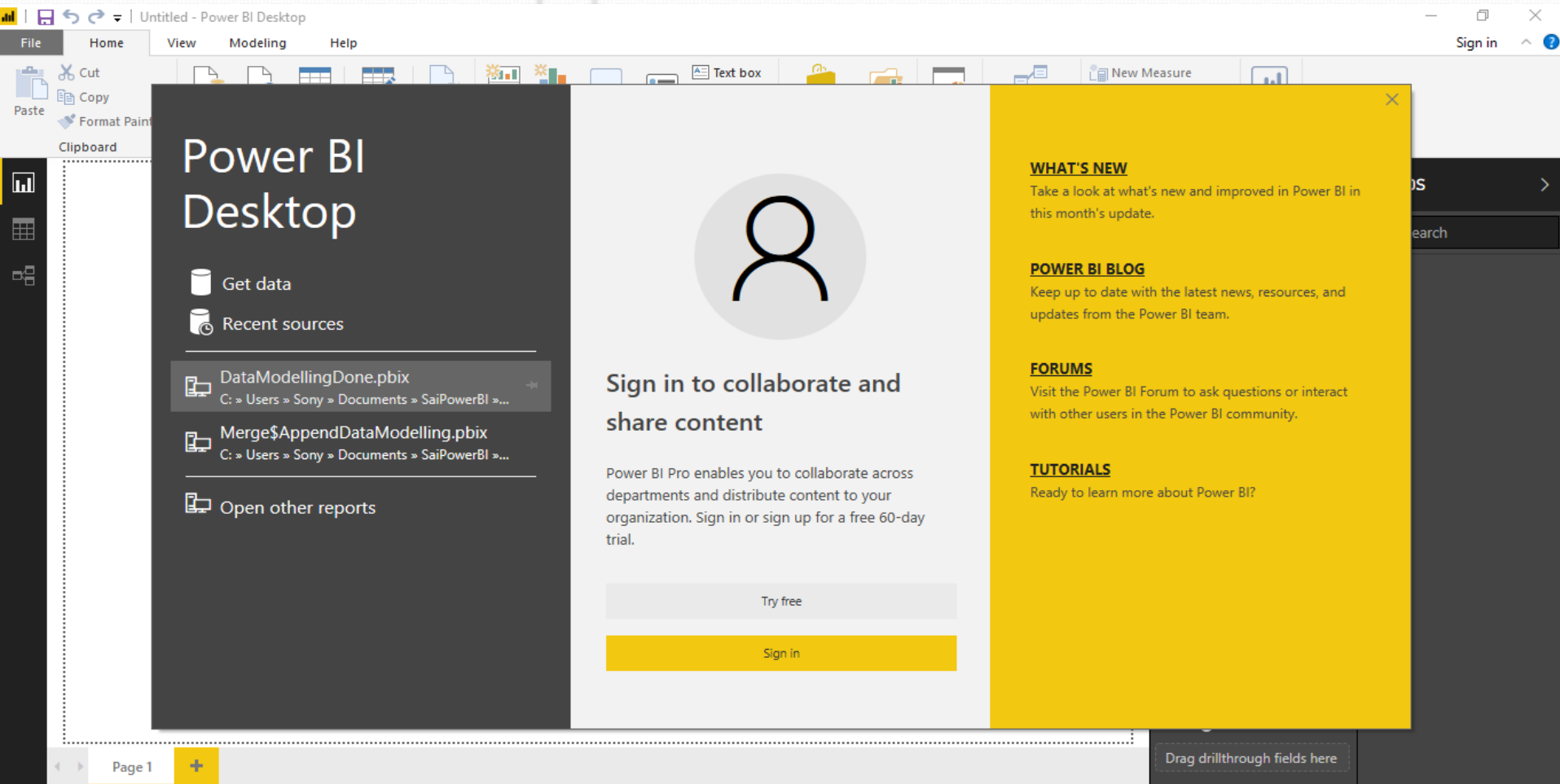
INSTALLING POWER BI DESKTOP

2. Click “Download Free” to start the Power BI Desktop download



You do **Not** need to sign in or register for a **Power BI Pro** account to access Power BI Desktop (*you can simply close this window*)

- Sign-in is required to collaborate and share content available through Power BI Service (*app.powerbi.com*)
- *You would not be able to sign in through gmail / yahoo account . Microsoft requires a **work** or **school** e-mail address*



You need a Power BI Pro account – to Share and Collaborate your report on Power BI Services .

Power BI | My Workspace > US_Sales_Analysis

File View Edit report Explore Refresh Pin Live Page Reset to default View related Favorite Subscribe Share

Upgrade to Power BI Pro

This feature is only available to users with a Power BI Pro license. When you upgrade, you get access to collaborate with others and distribute content. Upgrade today or try it free for 60 days. [Learn more](#)

Try Pro for free Upgrade account Cancel

Regional Sales Analysis

Sales and Avg Price by Month

Year

Sales by Demographic

Demographic	Sales
Professional	\$54M
Intermediate	\$13M
Advanced	\$9M
Novice	\$1M
Beginner	\$1M

100.00 %
Sales % All Regions

THE POWER BI INTERFACE

Three Core Views:

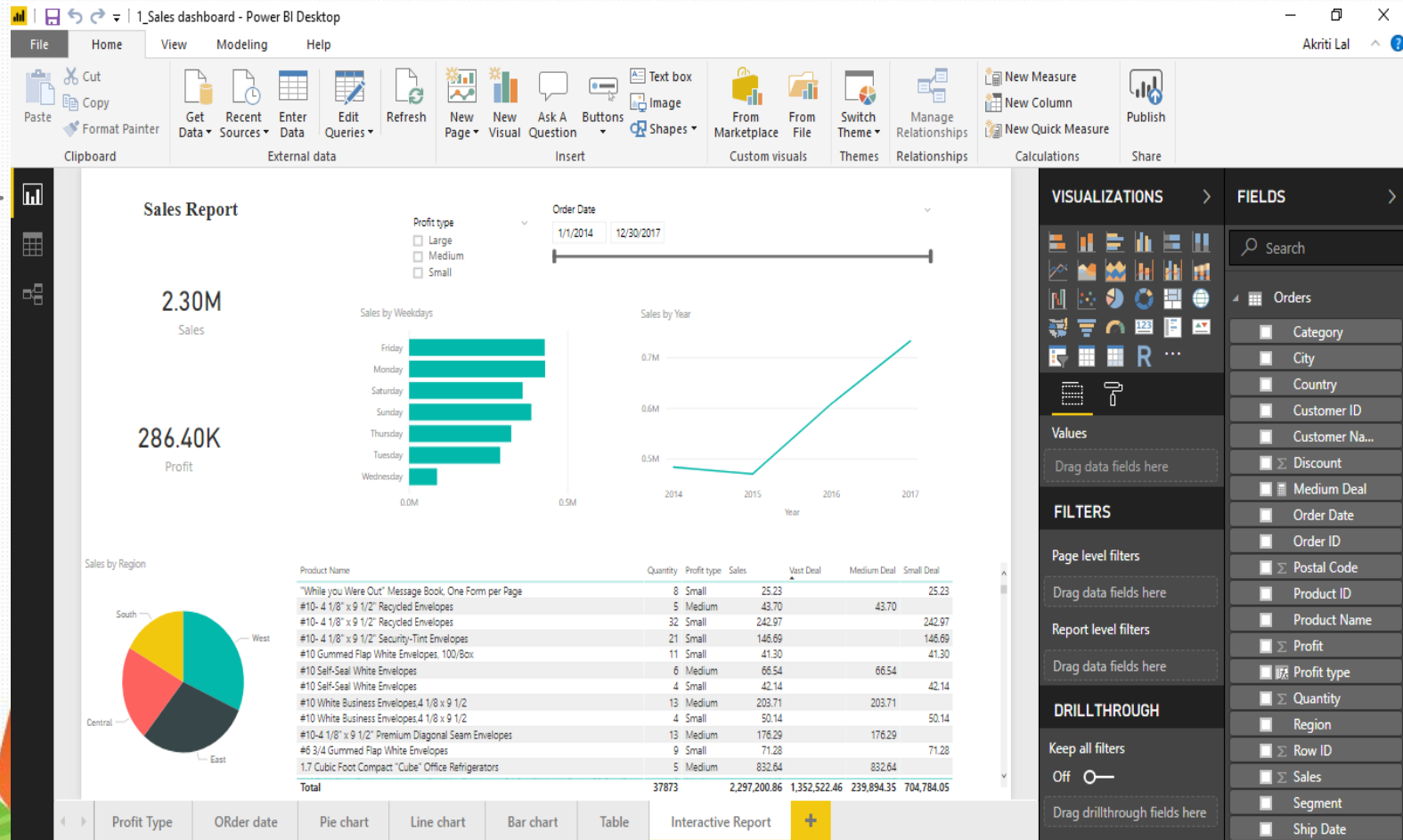
Report

Data

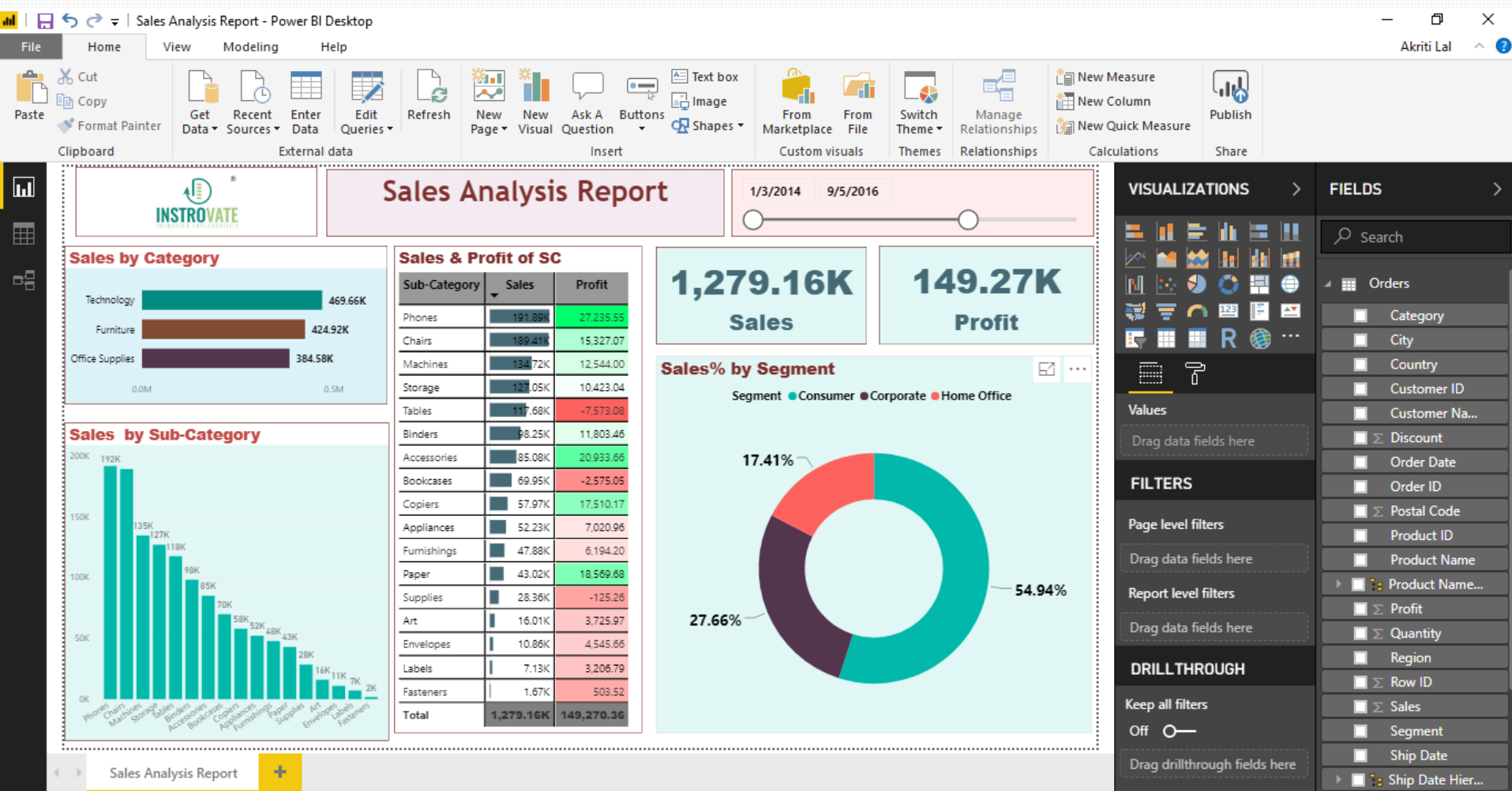
Relationships

/or Model

(2019)



Quick Demo of Creating a Report Using Microsoft Power BI



PROS & CONS OF **MODEL BASED TOOL** LIKE POWER BI VS **REPORT BASED TOOL** LIKE TABLEAU

Model Based Tool : Once defined, the same model can be used for different reports.

Report Based Tool : Simple to use, calculations are scoped to a single report only.



PROS

CONS

Model Based Tool : A good model that works with many different reports requires more authoring time.

Report Based Tool : Requires specific data transformation for every report. These assumes that the input is made by a single table, or something that can be transformed into a single table.

