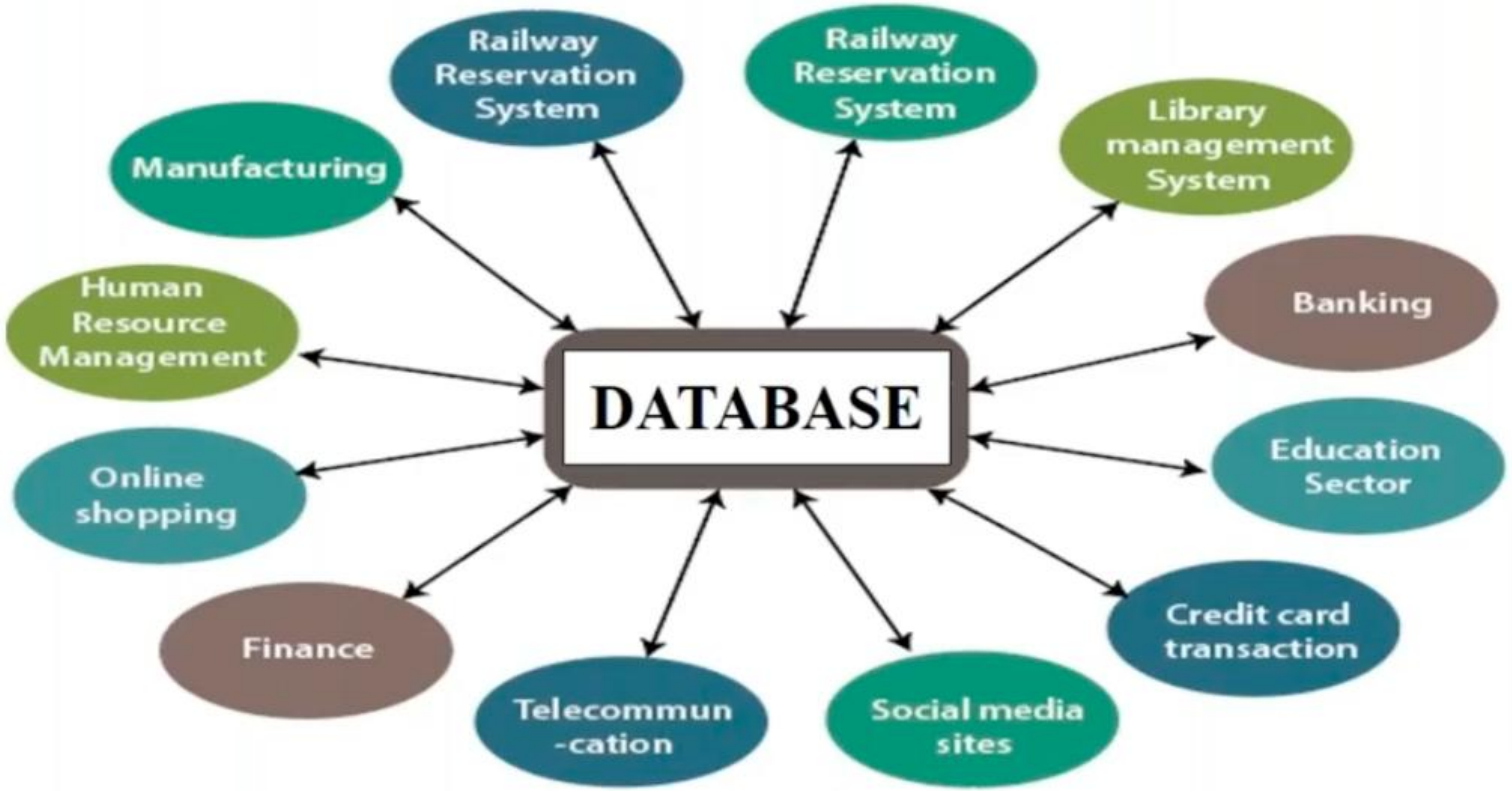
Agenda

- SQL
- Why is SQL Important?
- Power of Visualization
- Power BI
- Azure
- Course Outline

Some of Real Time Applications we use



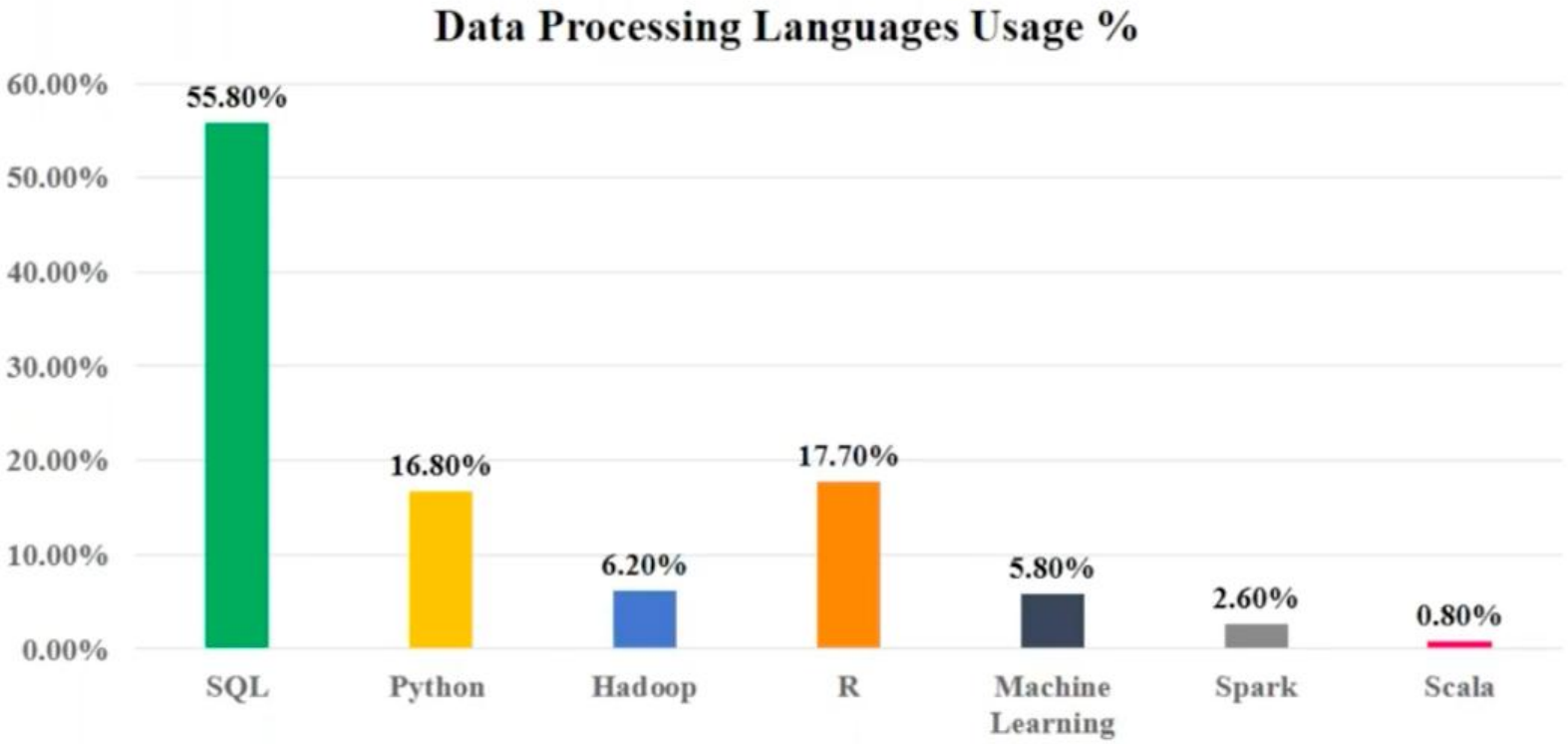
Why do you need a Database?

- Databases can store very large numbers of records efficiently
- Web interfaces to data
- It is very quick and easy to find **information**
- Easy to add new **data** and to edit data
- Data changes on a regular basis
- Multiple simultaneous changes to data
- Share huge data set among many people

SQL

- Stands for Structured Query Language
- SQL is used to communicate with a database
- SQL statements are used to perform tasks such as update data on a database, or retrieve data from a database
- Some common relational database management systems that use SQL are: Oracle, Sybase, Microsoft SQL Server

Why SQL is Important?



SQL Databases

PostgreSQL

IBM DB2

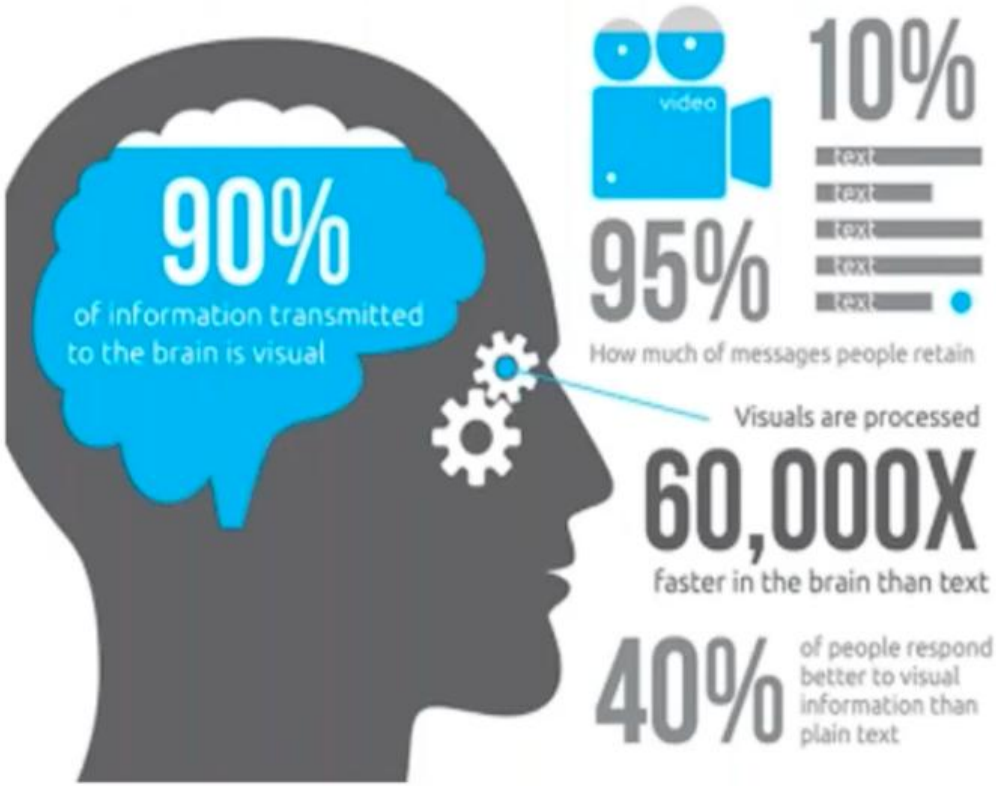
MySQL

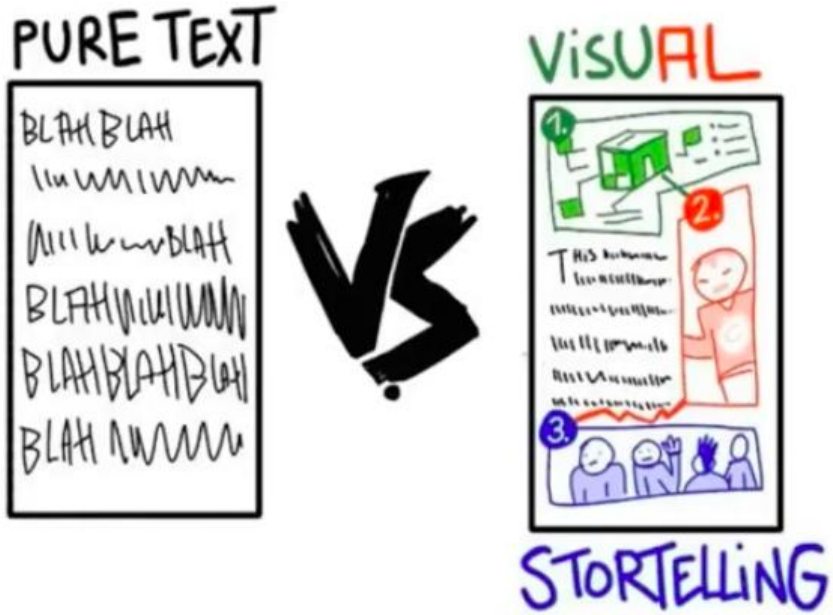
ORACLE

Why MySQL?

MySQL	Free (Open Source)
	Highly configurable
	High volume capabilities
	Cross platform Compatibilities
	Durability
	Reliable
	High Security
	Easy to Use

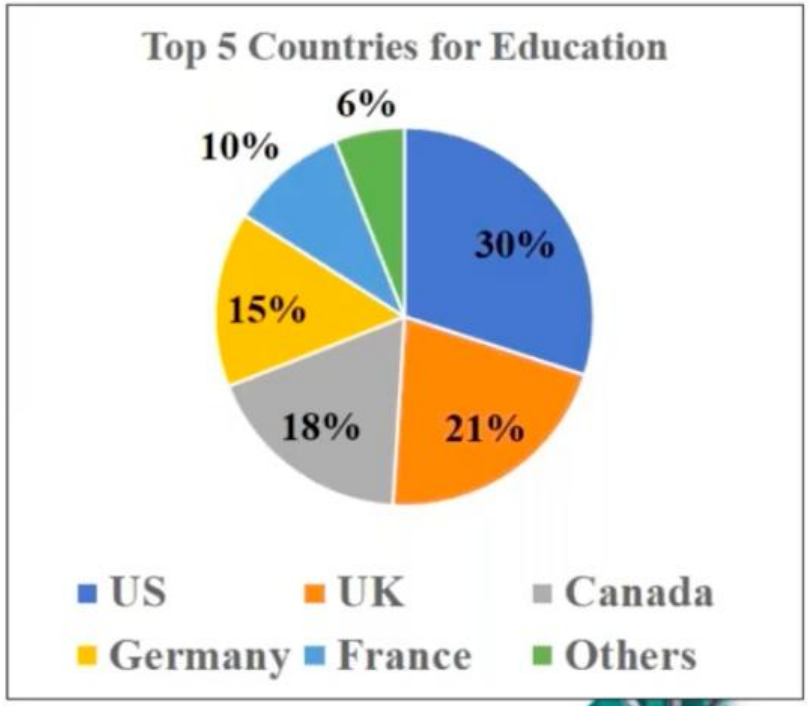
Visualization Analogy





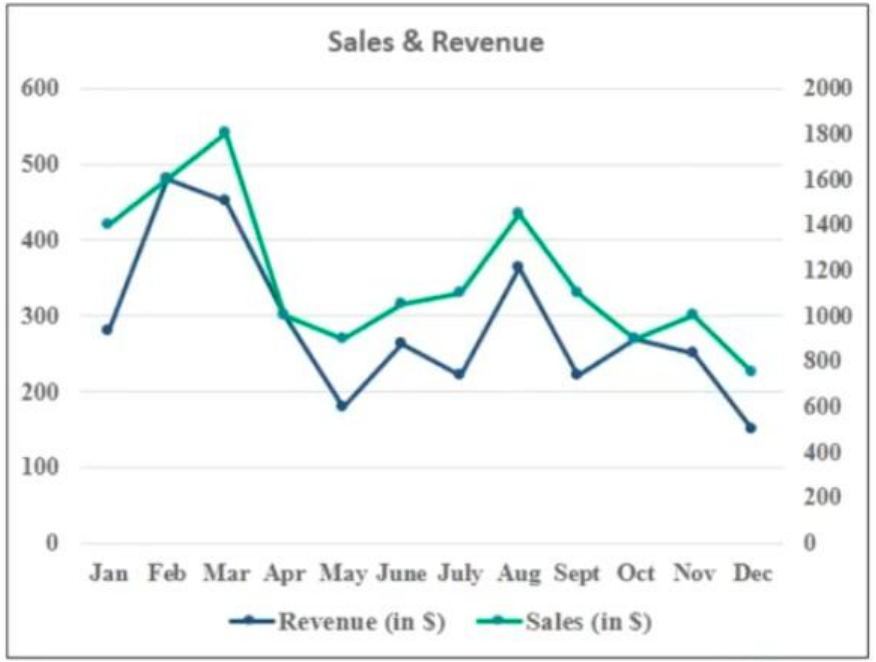
Visualization Analogy

Country	Education
US	30%
UK	21%
Canada	18%
Germany	15%
France	10%
Others	6%



Visualization Analogy

Month	Sales (in $)	Revenue (in $)
Jan	1400	280
Feb	1600	480
Mar	1800	450
Apr	1000	300
May	900	180
June	1050	262.5
July	1100	220
Aug	1450	362.5
Sept	1100	220
Oct	900	270
Nov	1000	250
Dec	750	150



Visualization Analogy

STORES	PRODUCTS	SALES
STORE 1	IPHONE	₹ 70,000
STORE 1	SAMSUNG	₹ 45,000
STORE 2	SAMSUNG	₹ 50,000
STORE 3	IPHONE	₹ 75,000
STORE 2	IPHONE	₹ 85,000
STORE 2	SAMSUNG	₹ 45,000
STORE 1	ONE PLUS	₹ 5,000
STORE 3	VIVO	₹ 12,000
STORE 3	SAMSUNG	₹ 50,000
STORE 1	VIVO	₹ 15,000
STORE 3	SAMSUNG	₹ 45,000
STORE 2	ONE PLUS	₹ 50,000

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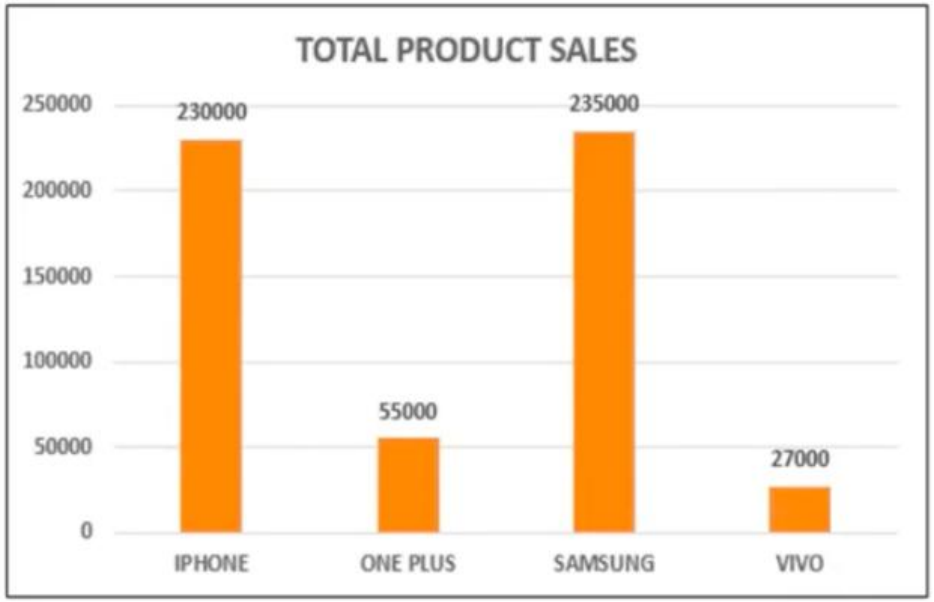
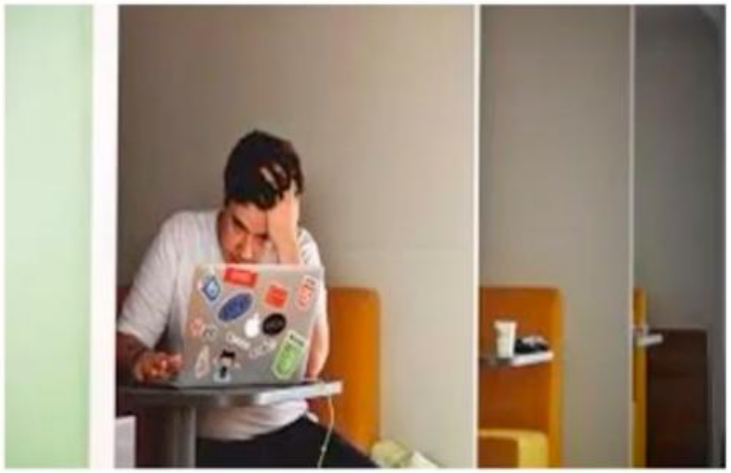
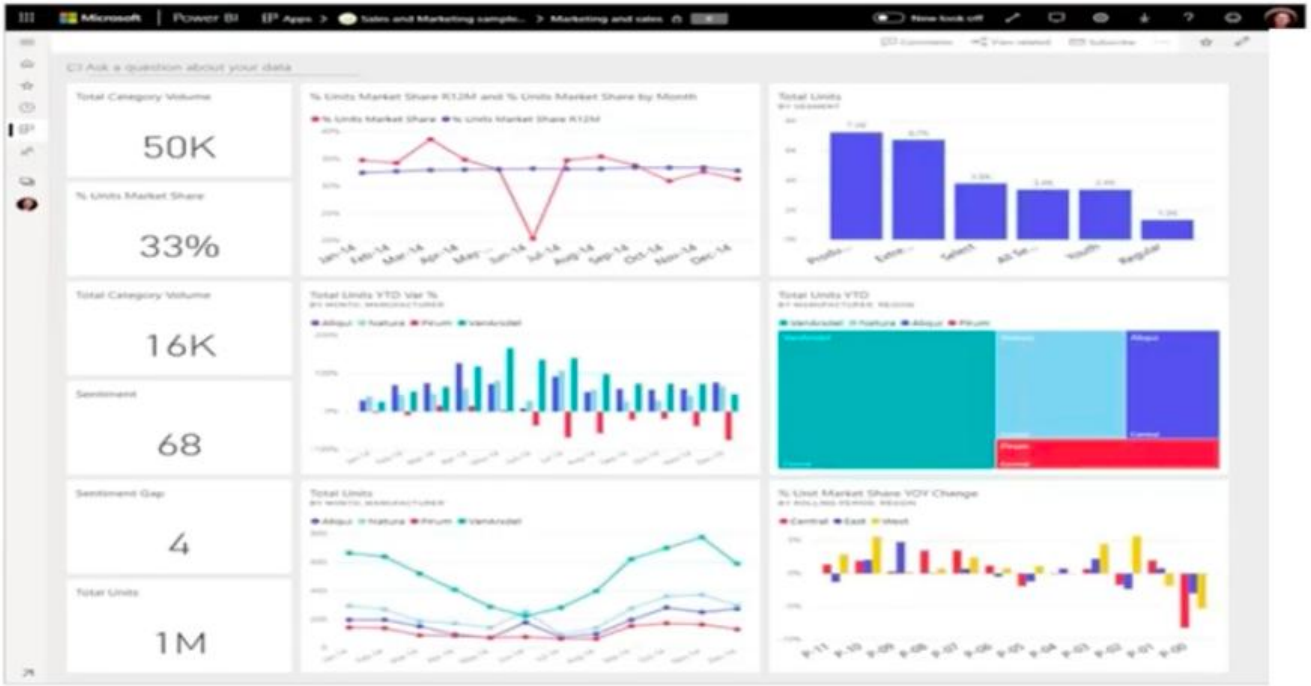


Life without Visualization

	Gender	Age	H1	F1	H2	F2	H3	F3	Height	Foot	Factor
1	Female	19.00	156.50	23.30	155.80	23.50	156.50	23.10	156.27	23.30	14.91
2	Male	21.00	165.50	25.50	165.30	24.50	166.50	25.60	165.77	25.20	15.20
3	Male	35.00	167.00	24.50	167.50	24.40	168.50	24.80	167.67	24.57	14.65
4	Female	19.00	158.50	24.60	158.50	23.50	158.70	23.50	158.57	23.87	15.05
5	Female	27.00	162.50	25.80	163.40	25.40	162.80	25.70	162.90	25.63	15.74
6	Female	19.00	159.50	23.50	158.00	23.40	158.00	23.60	158.50	23.50	14.83
7	Female	19.00	162.50	24.20	162.00	24.00	161.80	24.30	162.10	24.17	14.91
8	Female	20.00	165.40	23.90	165.00	23.80	166.00	23.80	165.47	23.83	14.40
9	Female	20.00	168.00	24.40	168.50	24.40	169.90	24.40	168.80	24.40	14.45
10	Female	22.00	159.20	24.70	159.50	24.50	160.00	24.50	159.57	24.57	15.40
11	Female	26.00	158.50	23.70	156.50	23.60	156.90	23.40	157.30	23.57	14.98
12	Female	19.00	162.00	24.30	161.00	24.60	160.90	24.40	161.30	24.43	15.15
13	Female	20.00	153.50	23.20	153.50	23.70	152.50	23.00	153.17	23.30	15.21
14	Female	21.00	158.00	24.90	157.80	24.60	158.50	24.90	158.10	24.80	15.69
15	Female	20.00	154.50	24.50	156.40	25.10	154.50	24.30	155.13	24.63	15.88
16	Female	20.00	163.00	23.00	161.50	24.00	163.50	23.50	162.67	23.50	14.45
17	Female	22.00	182.00	27.50	181.50	27.00	182.00	28.00	181.83	27.50	15.12
18	Male	27.00	175.00	27.50	178.50	27.50	176.50	27.50	176.67	27.50	15.57
19	Male	19.00	153.10	23.30	152.00	23.00	151.00	22.50	152.03	22.93	15.08
20	Female	22.00	170.00	25.00	172.50	25.60	170.50	25.50	171.00	25.37	14.83
21	Male	19.00	160.00	23.50	159.50	23.00	159.00	23.80	159.50	23.43	14.69
22	Female	20.00	155.50	23.20	154.40	23.00	153.50	22.50	154.47	22.90	14.83
23	Female	21.00	151.50	23.50	151.00	23.80	150.80	23.10	151.10	23.47	15.53
24	Female	21.00	158.00	23.50	158.50	24.20	157.80	23.50	158.10	23.73	15.01



Life with Visualization

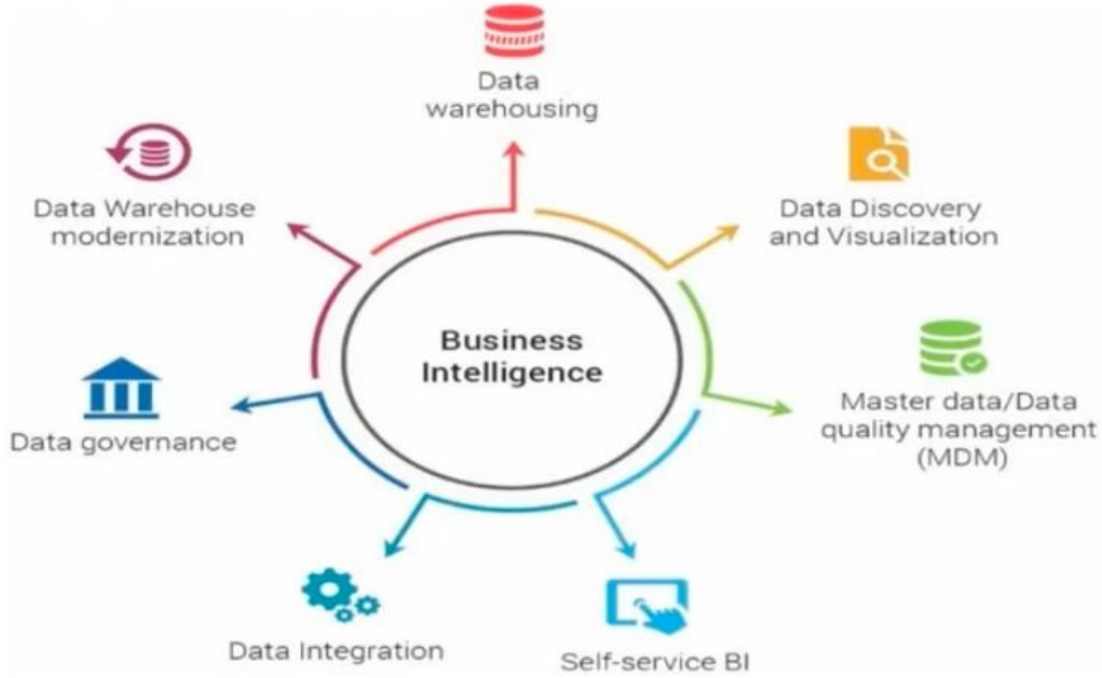


Dashboards / Reports can be accessed through smart phones, Tablets

Importance of Visualization

Visualization	Helping decision makers understand how the business data is being interpreted to determine business decisions
	Leading the target audience to focus on business
	Handling large amounts of data in a pictorial format
	Converting trends into business strategies
	Revealing unnoticed key points about the data

Business Intelligence

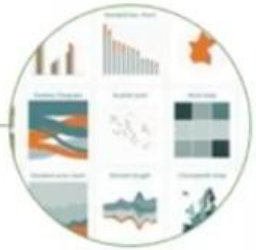


Business intelligence (BI) combines business analytics, data mining, data visualization, data tools and infrastructure, and best practices to help organizations to make more data-driven decisions

What is Power BI?

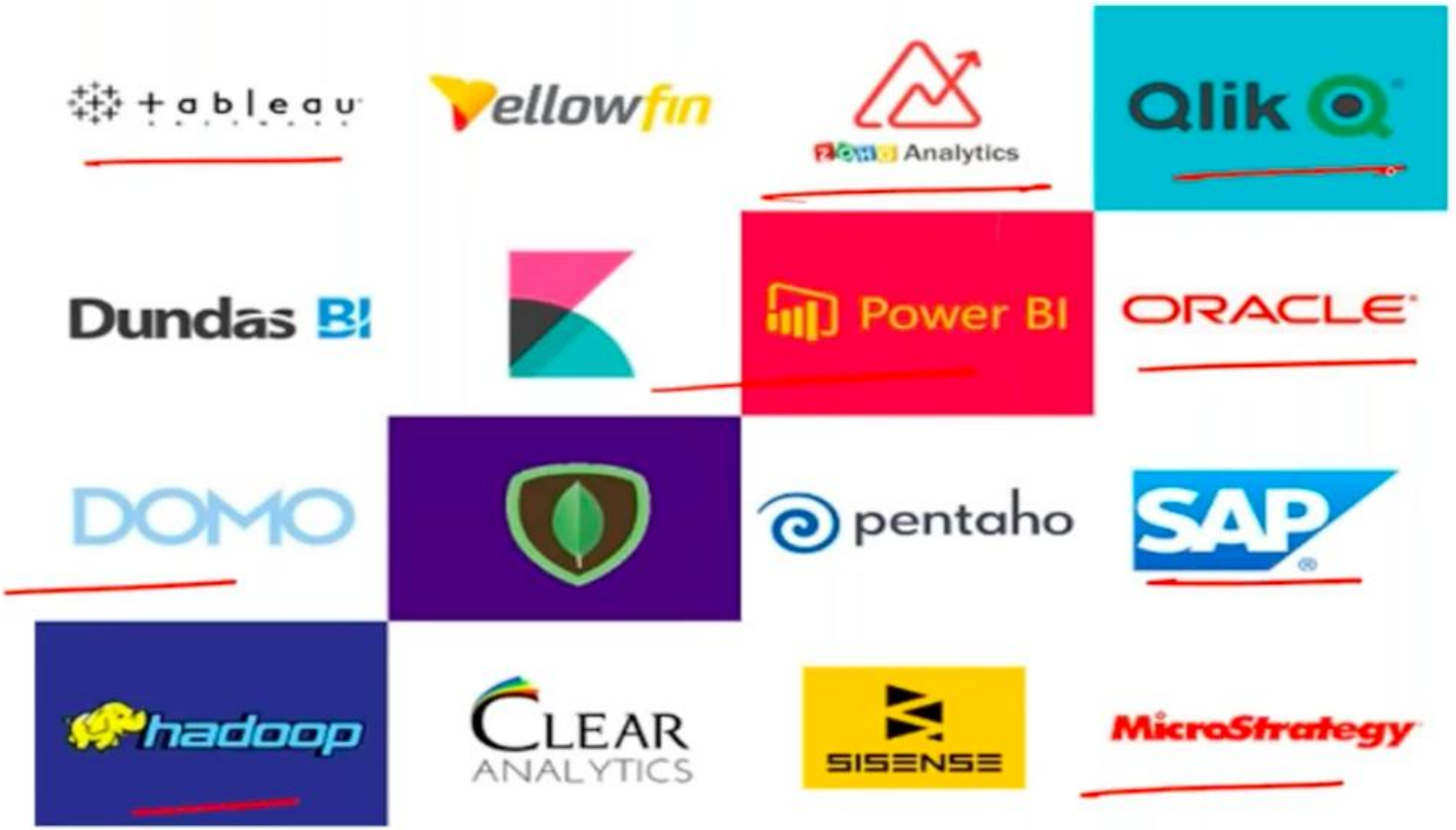
Analyze Data

Clean Data



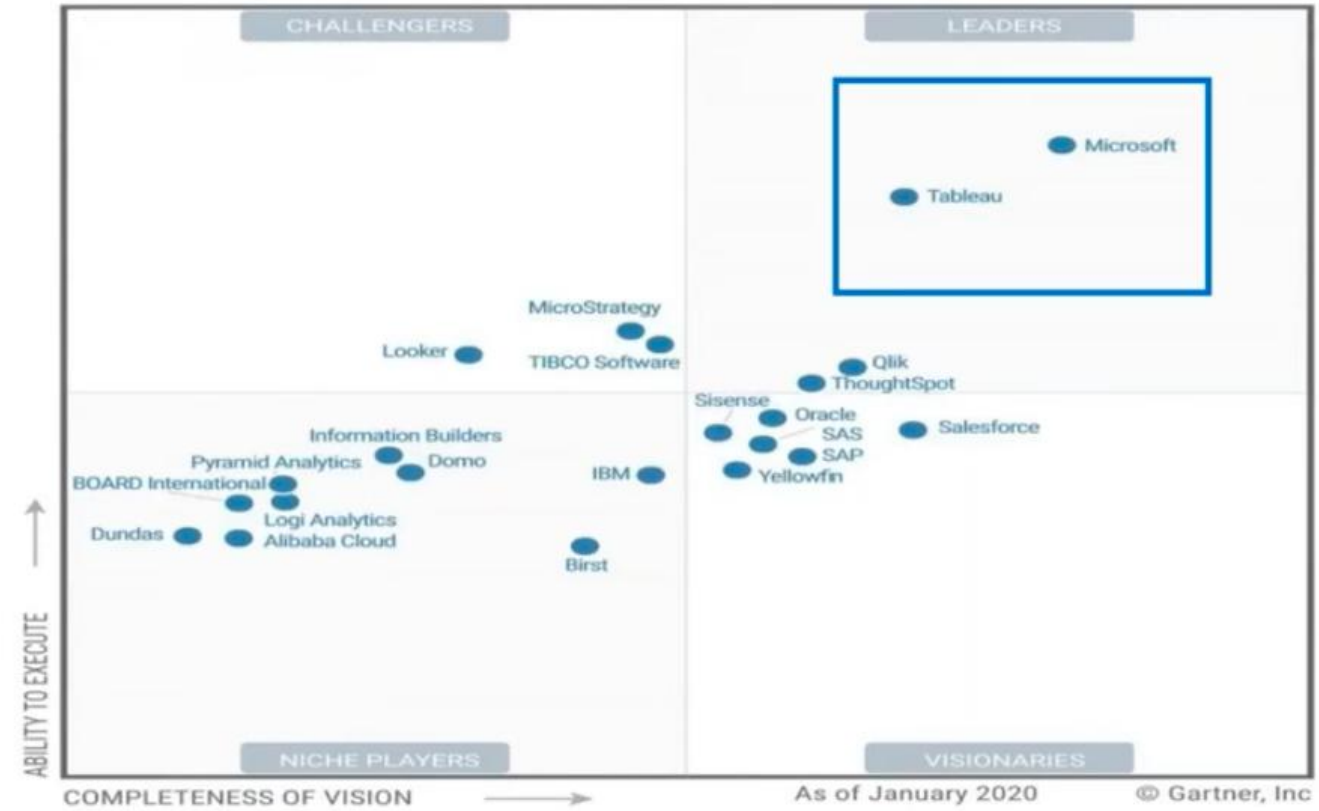
Visualization

BI tools available in market



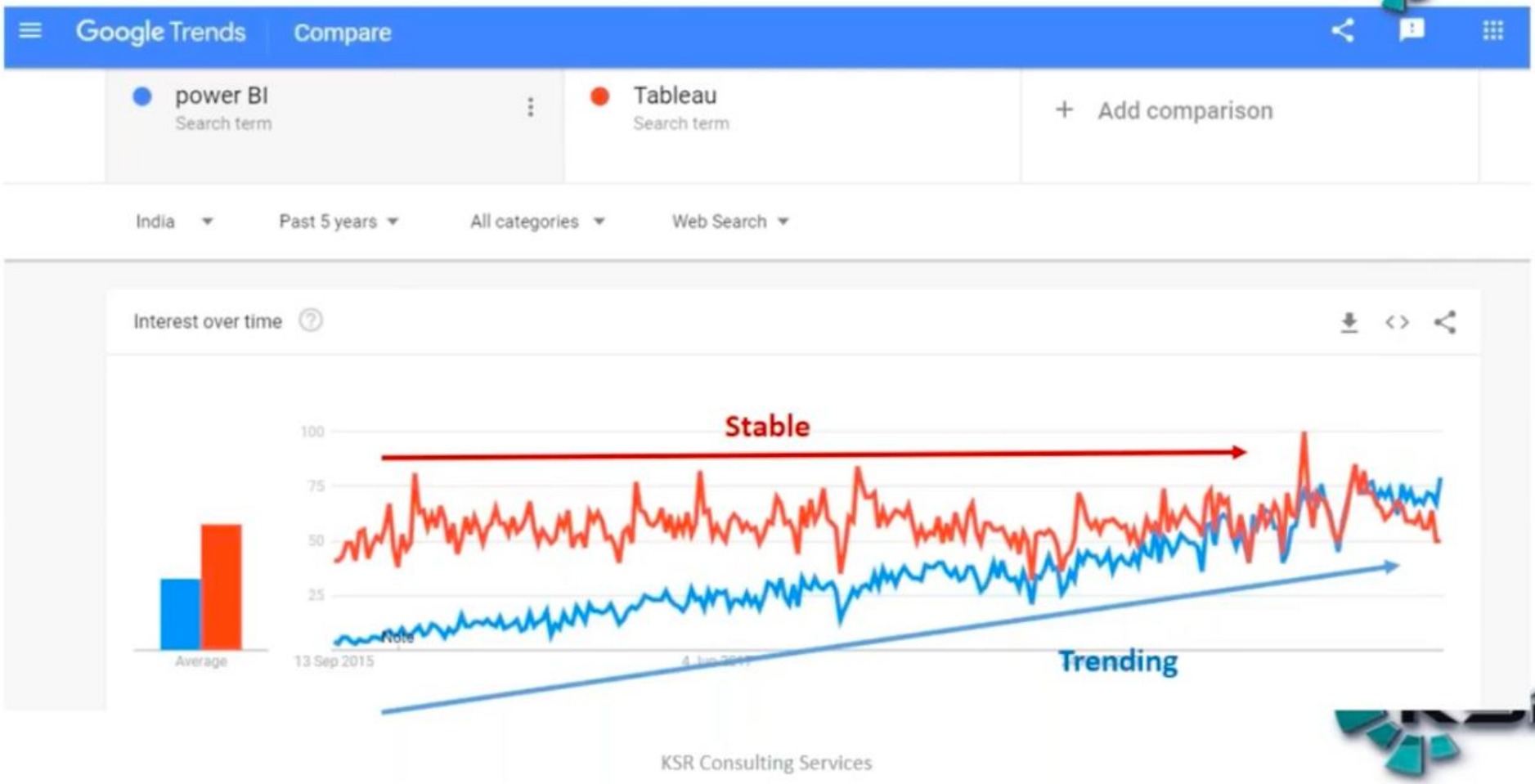
2020 Gartner Magic Quadrant for BI and Analytics

Figure 1. Magic Quadrant for Analytics and Business Intelligence Platforms



Source: Gartner (February 2020)

Google Trends Power BI vs. Tableau

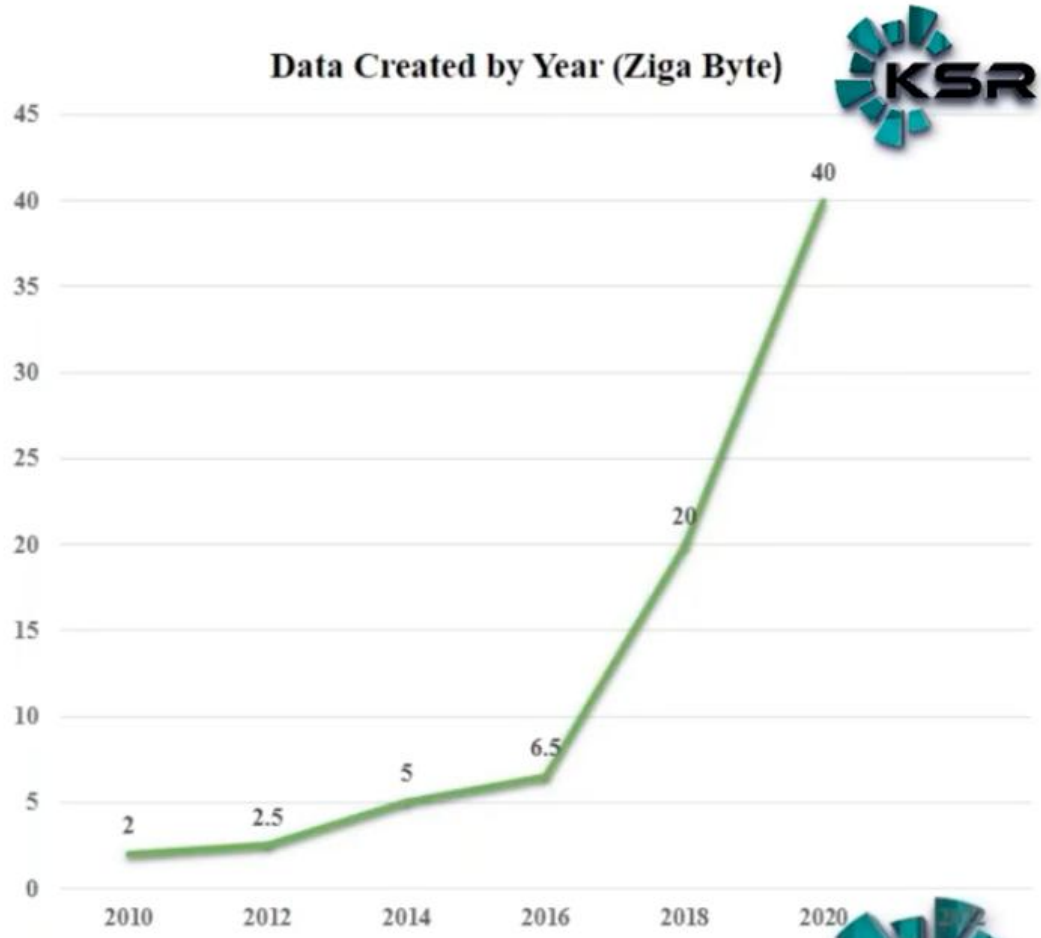


History of Power BI

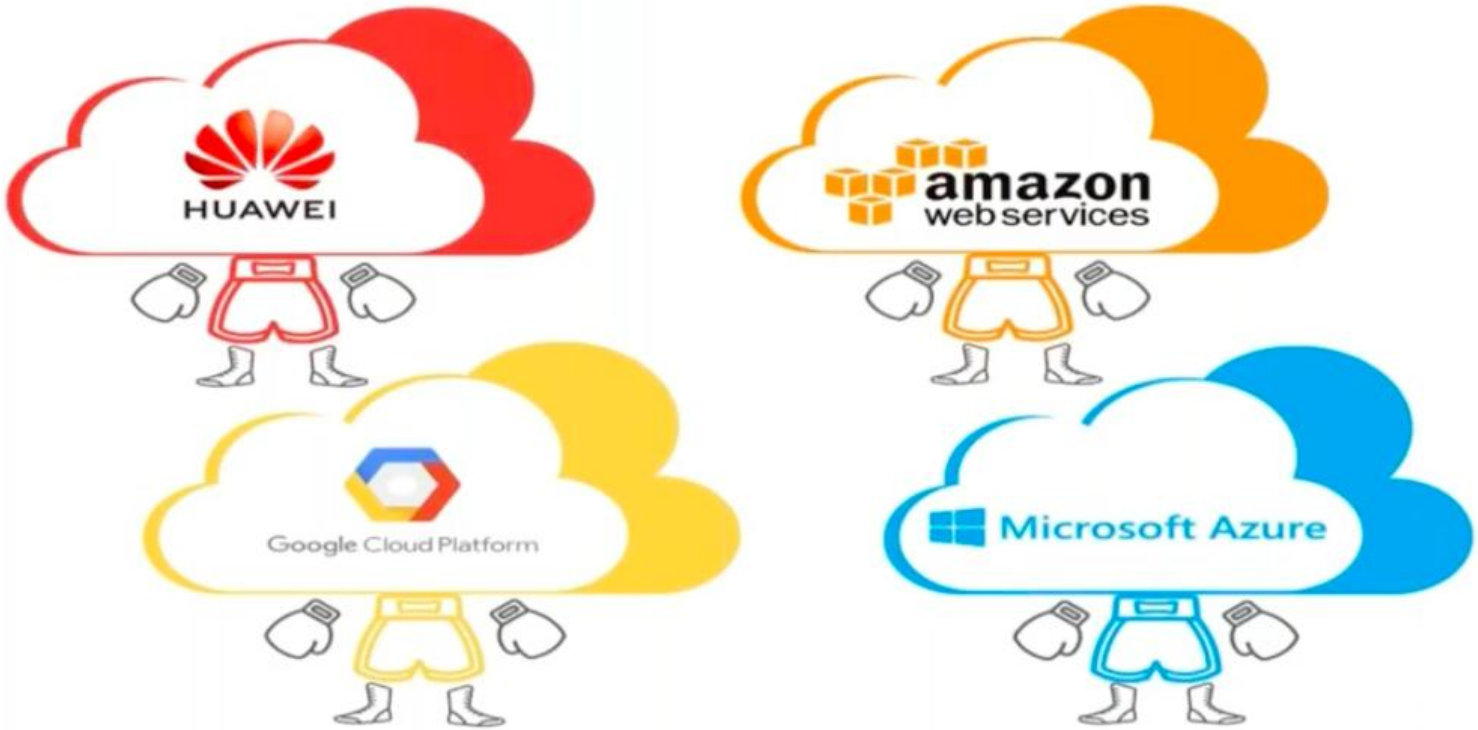
- July 24, 2015
- Microsoft Product
- Popular Companies using Power BI
  - Adobe,
  - Dell,
  - HP,
  - Honeywell,
  - Edwards

Data Size & Data Growth

Size - Expansion	Size	10 power
8 Bits	1 Byte	-
1024 Bytes	1 Kilobyte	3
1024 Kilobytes	1 Megabyte	6
1024 Megabytes	1 Gigabyte	9
1024 Gigabytes	1 Terabyte	12
1024 Terabytes	1 Petabyte	15
1024 Petabytes	1 Exabyte	18
1024 Exabytes	1 Zettabyte	21
1024 Zettabytes	1 Yottabyte	24



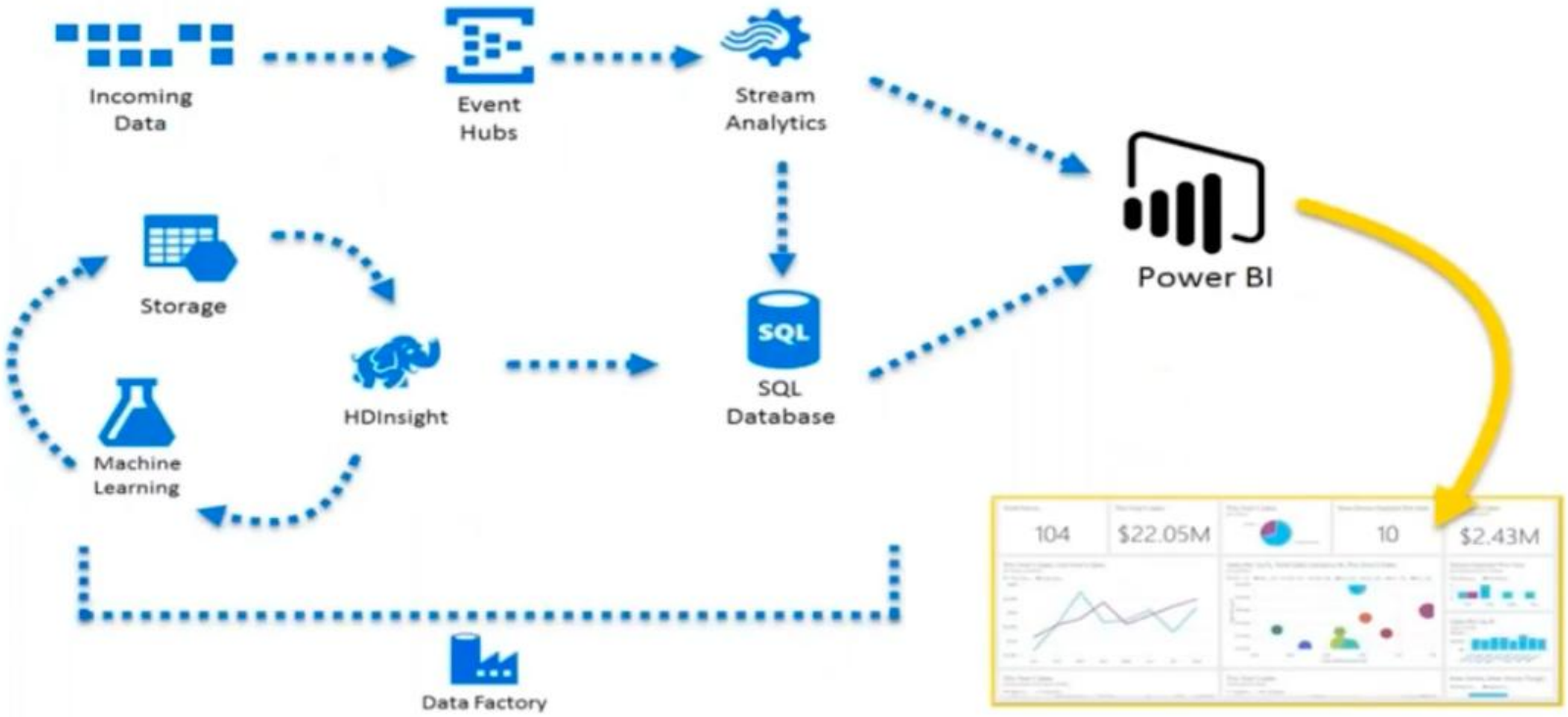
Cloud Computing



Need for Cloud Computing

- Cost-effective
- Unlimited storage space
- Backup and Recovery
- Efficiency
- Flexibility
- Strategic edge
- Faster deployment

Azure

- Limitless data and analytics capabilities
- 2nd largest cloud computing
- Cost Efficient Platform
- World wide access
- Stability and speed
- Environment friendly

Azure with Power BI