

# **Business Intelligence Architectures**

# Our talk today



Introduction of BI Architecture



Usage of BI Architecture



Components



New trends





## **Business Intelligence ?**

**A set of methodologies, processes, architectures, and technologies that transform raw data into meaningful and useful information used to enable more effective strategic, tactical, and operational insights and decision-making.**

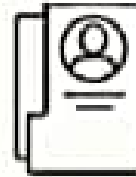
**-Forrester Research-**

## Business Intelligence Architecture

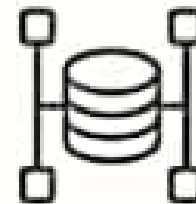
Business Intelligence architecture refers to the infrastructure that organizations use to define their data collection streams, information administration, and all the technology that supports their business intelligence.



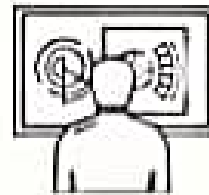
# Why BI Architecture ?



Backlog of business requests



Need for self-service BI



Messed up IT system



Cost

# Selection of Business Architecture

**“ The architecture of the individual components, as well as BI solution, can make or break BI effort”**

Possible causes that can make the selection of BI architecture difficult for organization

- Unclear which architectural options are available
- Unclear of what are the differences between the architectures are and what the resulting organizational impact is
- Unclear of which architecture should be selected given particular requirement

# General BI Architecture

## Layered Structure of BI solution

Layer 4 : Analytical Facilities



Layer 3 : Data Responsibilities



Layer 2 : Integration Services

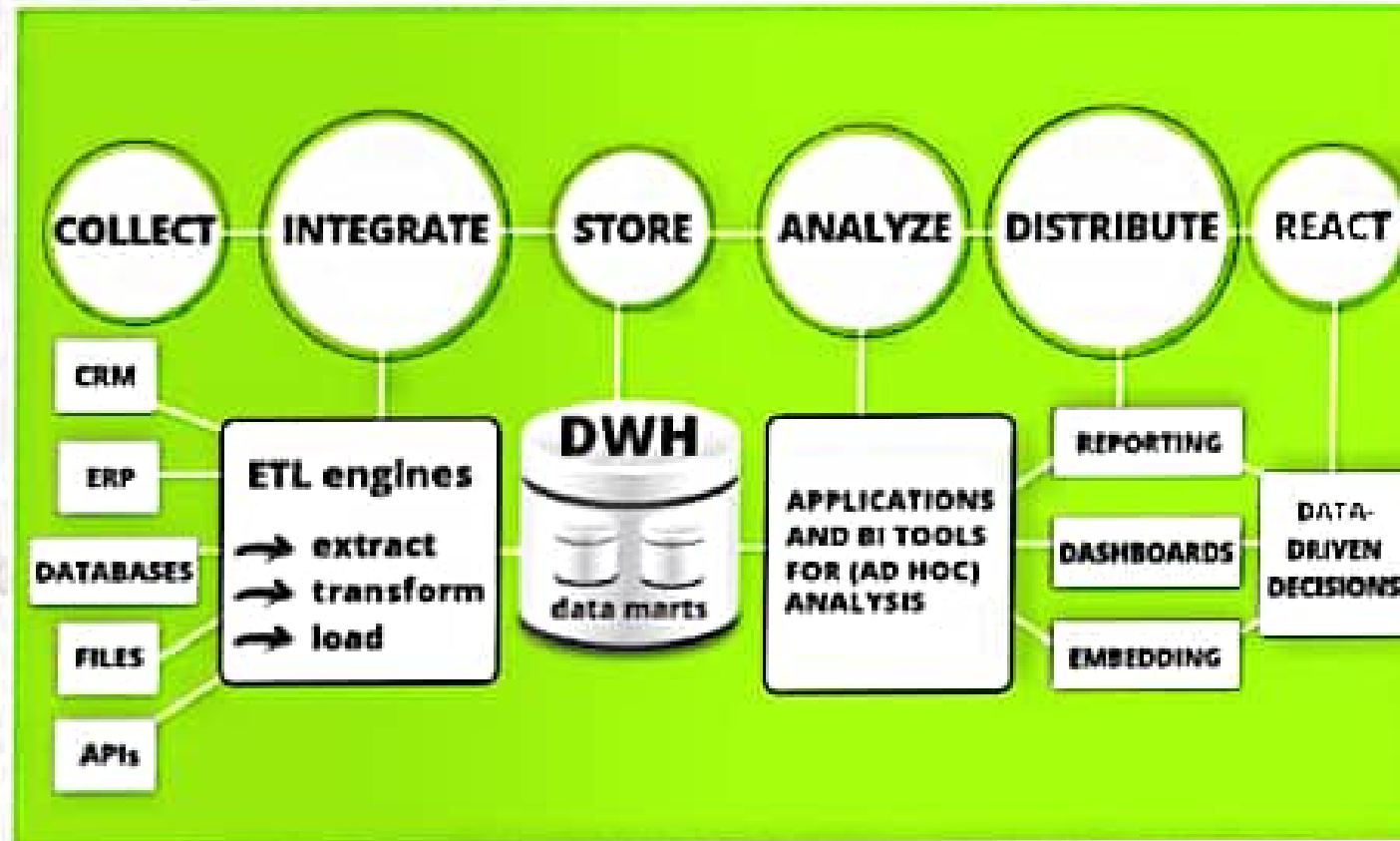


Layer 1 : Data sources / Operational systems



# BI Architecture Framework in Modern Business

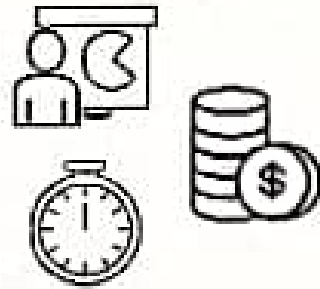
- Collection of Data
- Data Integration
- Storage of Data
- Data Analysis
- Distribution of Data
- Reaction Based on insights





## Choice of BI architecture is depend on;

- Level of integration
- Real-time Data support
- Cost
- Amount of Data
- Development time
- Maintainability
- Data Quality
- Scalability
- Performance
- Difficulty
- Customizability

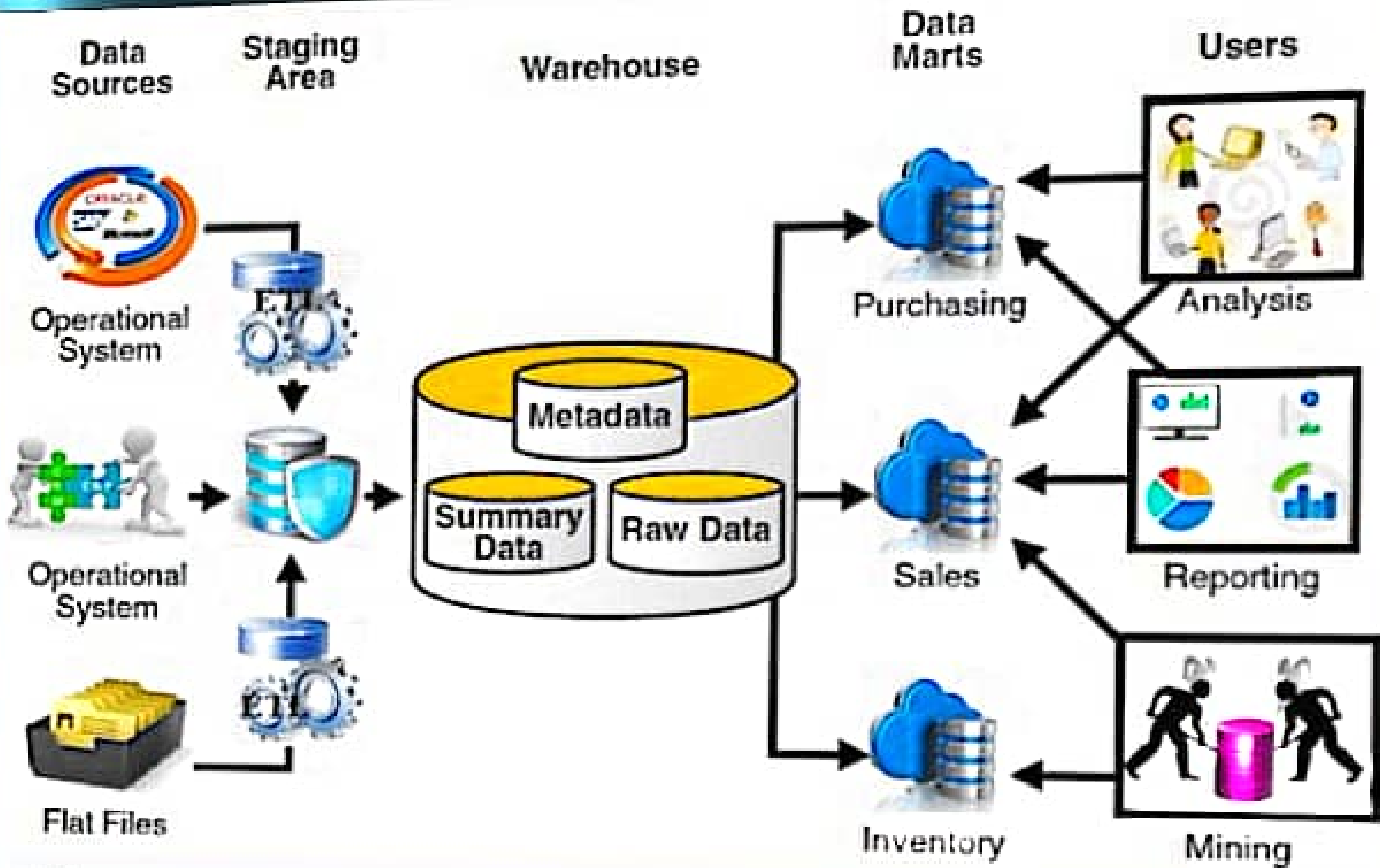


## Advantages of a Business Intelligence Architecture

- Cohesion between the various components for better overview
- High scalability
- Flexible reporting and analyzing, using BI to its full potential
- Easier to manage thanks to it's clear structure = satisfied users ( BI developers, BI consultants, Data scientists, Data analysts, End users)
- Higher data quality and guaranteed response times

# Business Intelligence Architecture Components





## Data Sources

- ERP Data
- Legacy Data
- Flat Files
- External Data



## Staging Area - ETL Process

- Select
- Extract
- Transform
- Integrate
- Load



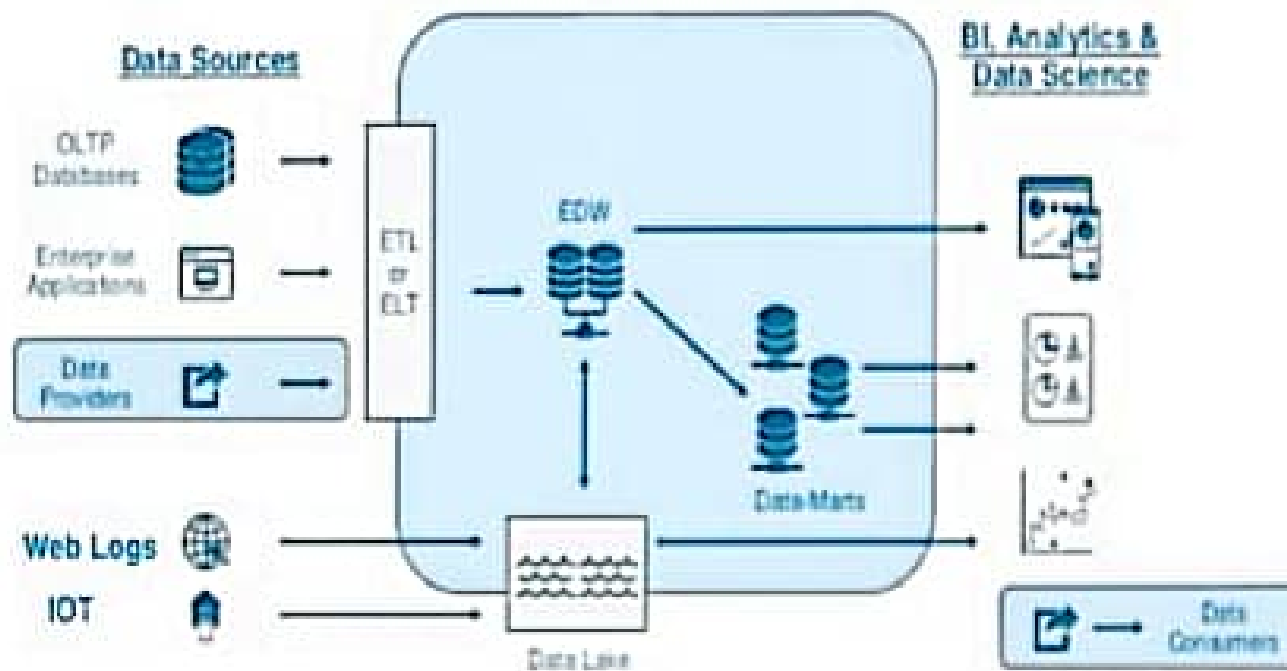
## Applications

- Analysing
- Business Reporting
- Data Mining
- Dashboards
- Custom Built Applications



## Warehouse & Data Marts





# Traditional BI Architecture

## Pros

- High security
- Having the control

## Cons

- Low performance
- High Cost
- slow processing

# Amazon Web Services



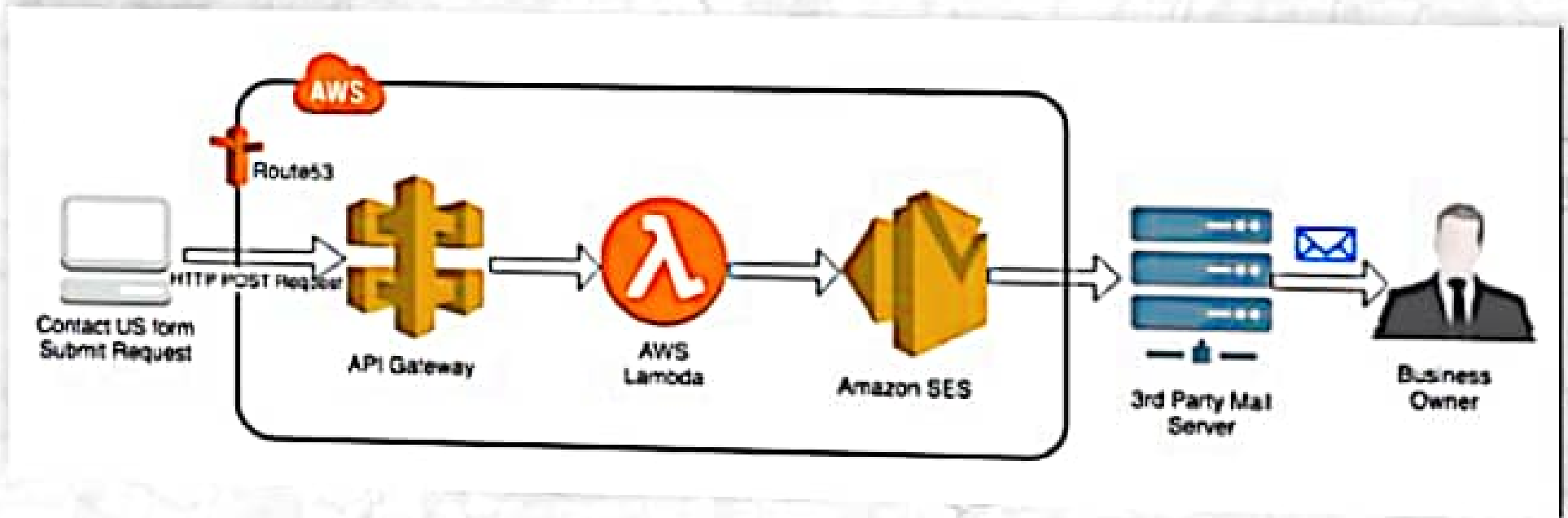
Amazon Web Services, Inc. (AWS) is a subsidiary of Amazon providing on-demand cloud computing platforms and APIs to individuals, companies, and governments, on a metered pay-as-you-go basis.

# Features of AWS

- Serverless Cloud Functions
- Security and Compliance
- Infrastructure as a service
- Mobile Friendly Access
- AWS Marketplace
- Flexible Database and Storage



# AWS Architecture





## Pros

- Easy to use
- No capacity limits
- Provides speed and agility
- Secure and Reliable



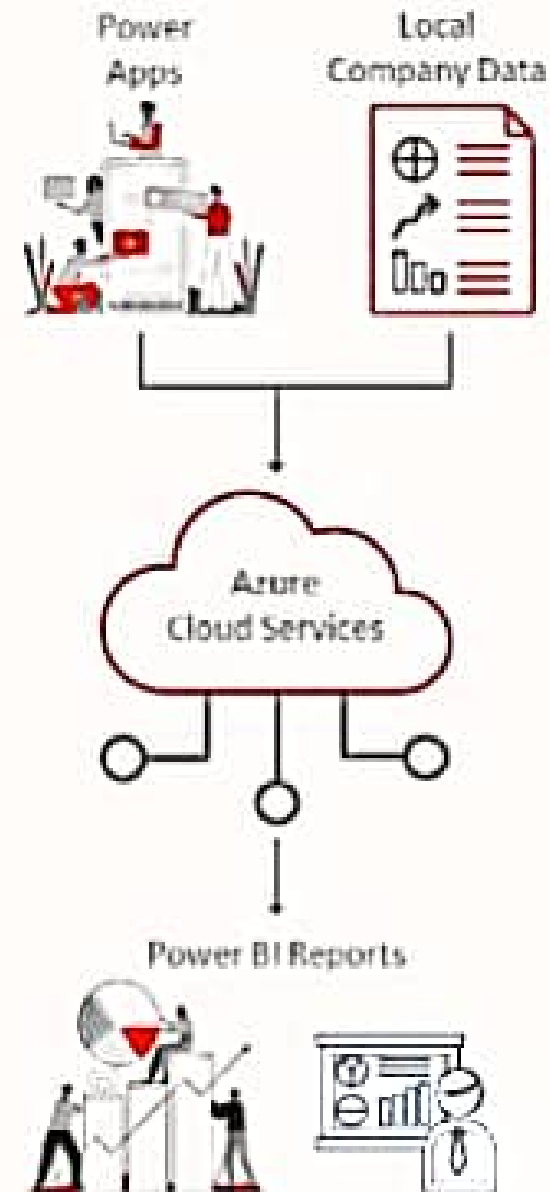
## Cons

- Limitations of Amazon EC2
- Security Limitations
- Technical support fee
- General cloud computing issues

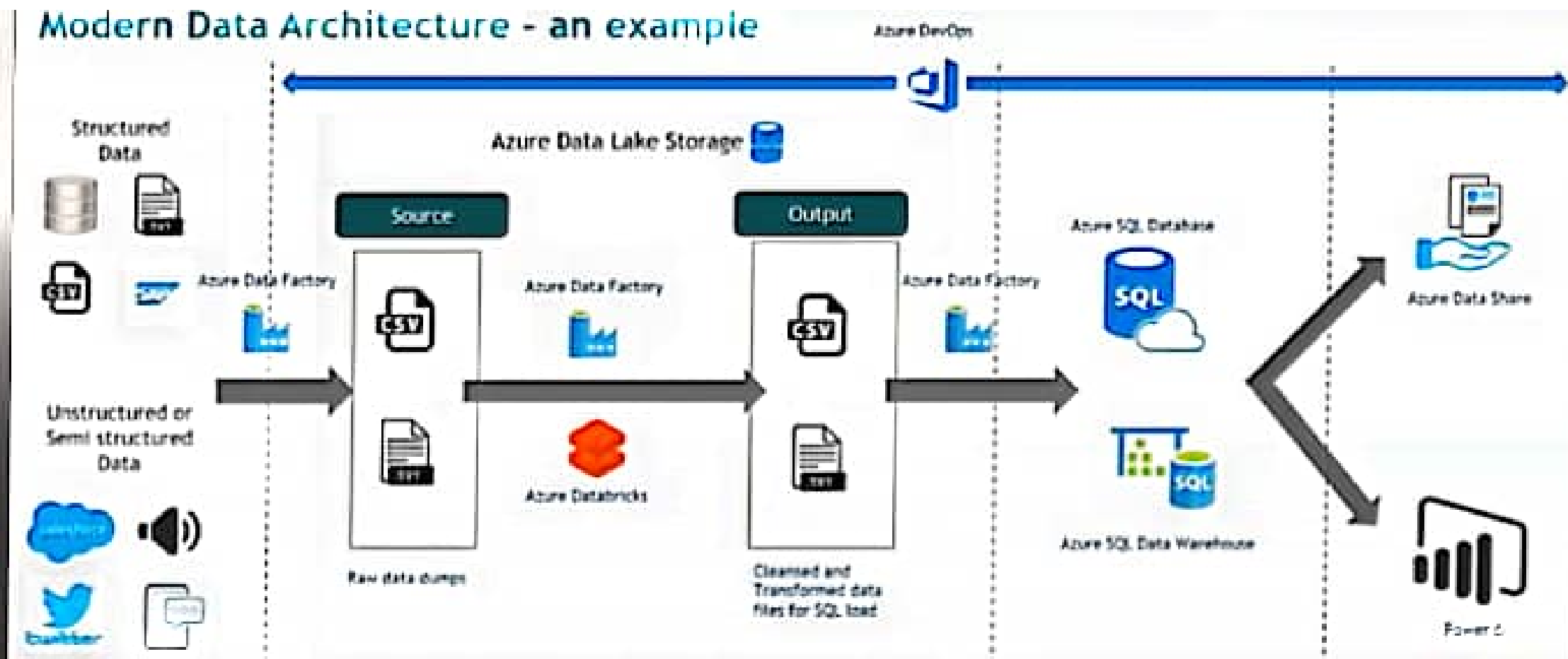


# Microsoft Azure Cloud Data Architecture

Azure Data Architecture is a set of services and tools that allow us to gather and process the data with the use of cloud computing.

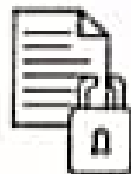


## Modern Data Architecture - an example



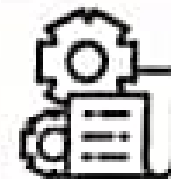
## Pros

- High Availability & Uptime
- Data Security
- Scalability
- Cost Effectiveness
- Flexibility
- Hybrid benefit



## Cons

- Required Management
- Requires Platform Expertise
- General cloud computing issues



**Thank You**