

آموزش نرم افزار Power BI با رویکرد مدیریت پروژه

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Power BI



First Session

سرفصل های دوره

۱. مفاهیم و مقدمات هوش تجاری و هوشمندسازی کسب و کار

- معرفی هوش تجاری و ویژگی های مورد نظر در سازمانهای پروژه محور
- تاریخچه و ادبیات موضوعی هوش تجاری و هوشمندسازی کسب و کار و ویژگی های آن
- معرفی نرم افزار Power BI و ویژگی های آن
- آموزش نحوه داندلود و نصب نسخه های مختلف نرم افزار

۲. آماده سازی داده ها و فرآیند Transformation و Cleaning

- آشنایی با منابع داده و نحوه اتصال به آنها
- آشنایی با ابزار قدرتمند Power Query جهت پاکسازی و انجام عملیات یکپارچه سازی داده های ورودی
- آشنایی با ابزارهای پیشرفته Power Query و زبان برنامه نویسی M
- تعریف سناریوهای مختلف مدیریت پروژه در زمان آماده سازی داده ها

سرفصل های دوره

۳. فرآیند مدلسازی داده ها

- نحوه ایجاد ارتباط بین کوئری ها و منابع داده
- نحوه بهبود عملکرد مدل در نرم افزار
- فرمول نویسی DAX مقدماتی و پیشرفته در سناریوهای مختلف پروژه محور
- آشنایی با Measure و ستون های محاسباتی

۴. مصورسازی مدیریتی و تبدیل داده به اطلاعات

- معرفی انواع Visual ها در ساختار نرم افزار، KPI، Custom Visual و ...
- آشنایی با ساختار ایجاد Tooltip و فرمت های شرطی
- نحوه تهیه گزارشات مدیریت پروژه ای مانند تحلیل ارزش کسب شده، گزارشات مستندات و مدارک، گزارش وضعیت پروژه، تایم شیت، بررسی مالی و هزینه ای پروژه، جریان نقدینگی و ...

۵. تعریف سطوح دسترسی و Row Security Level

- اشتراک گذاری گزارش ها و داشبوردها (Power BI Report Server, Power BI Service)
- تنظیم و اشتراک گذاری گزارش ها و داشبوردها جهت مشاهده در تلفن هوشمند
- انجام تحلیل های پیشرفته و بررسی نکات تکمیلی (تحلیل متون، نمای گزارش ها، فونت فارسی، تاریخ های شمسی، نقشه های آفلاین، معرفی منابع مفید و ...)
- تعریف سطوح دسترسی و Row Security Level

A brief history of business intelligence

THE BEGINNING

● **1958**

IBM Researcher Hans Peter Luhn publishes "A Business Intelligence System." Hans is later named the Father of Business Intelligence.



● **1970'S**

The first few BI vendors pop up with tools that are meant to help in accessing and organizing data. [[BetterBuys](#)]

A brief history of business intelligence



1980'S-1990'S THE FIRST GENERATION OF BI

• **1988**

The Multiway Data Analysis consortium, an International conference to streamline data processes, held in Rome.

[[BetterBuys](#)]



x



• **1989**

Howard Dresner defines business intelligence as we know it today: "Concepts and methods to improve business decision making by using fact-based support systems."

[[Wikipedia](#)]

• **1997**

The use of the term "business intelligence" becomes widespread.



.o

A brief history of business intelligence



EARLY 2000'S THE SECOND GENERATION OF BI

— **2008** —

Business intelligence, analytics and performance management revenue reaches \$8.8 Billion.
[Gartner]



— **2005** —

With social media platforms like Facebook and Twitter on the rise, the amount of data created starts skyrocketing.



— **2010** —

35% of organizations employ pervasive BI. 67% of “best in class” companies have some self-service BI. [Information Builders]



A brief history of business intelligence



TODAY THE NEXT GENERATION OF BI

• **2017**

Augmented analytics - the ability to automate insights using machine learning and natural language generation - is predicted as the future of data and analytics by Gartner. [[Gartner](#)]



x

• **2018**

Cloud BI adoption skyrockets to 49%, nearly doubling adoption levels of 2016 (25% of enterprise users). [[Forbes](#)]



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• **2020**

Mobile analytics market expected to grow to \$4.12 Billion. [[MarketsAndMarkets](#)]

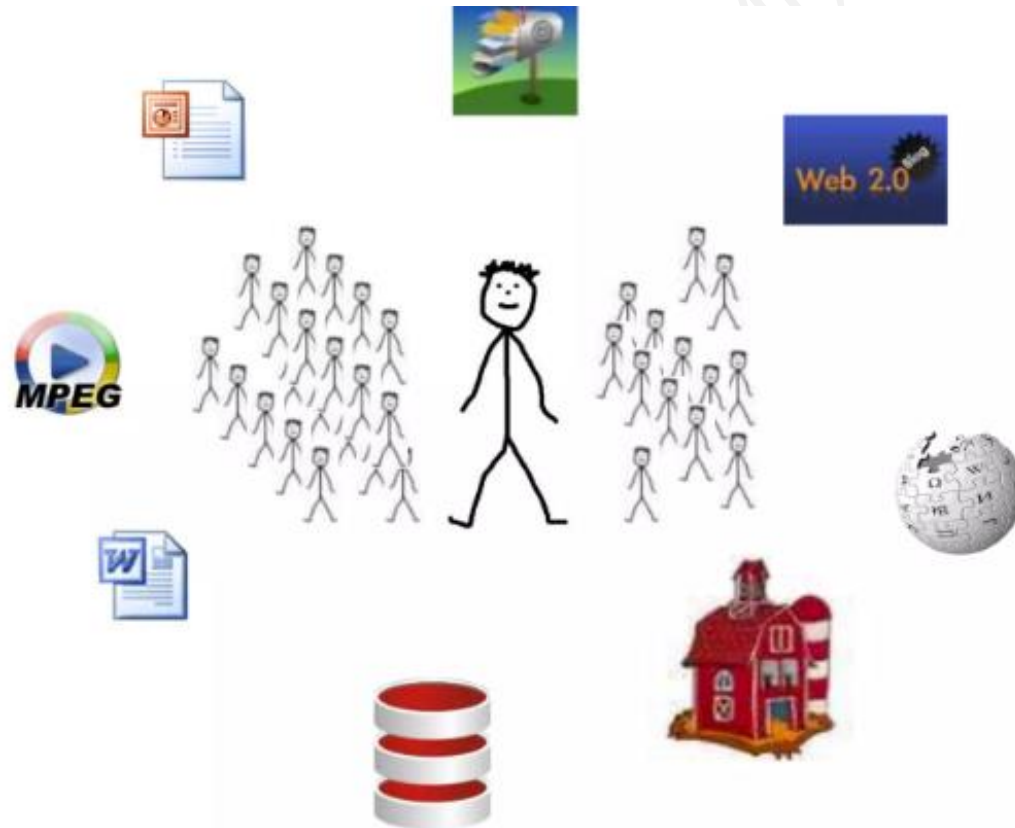


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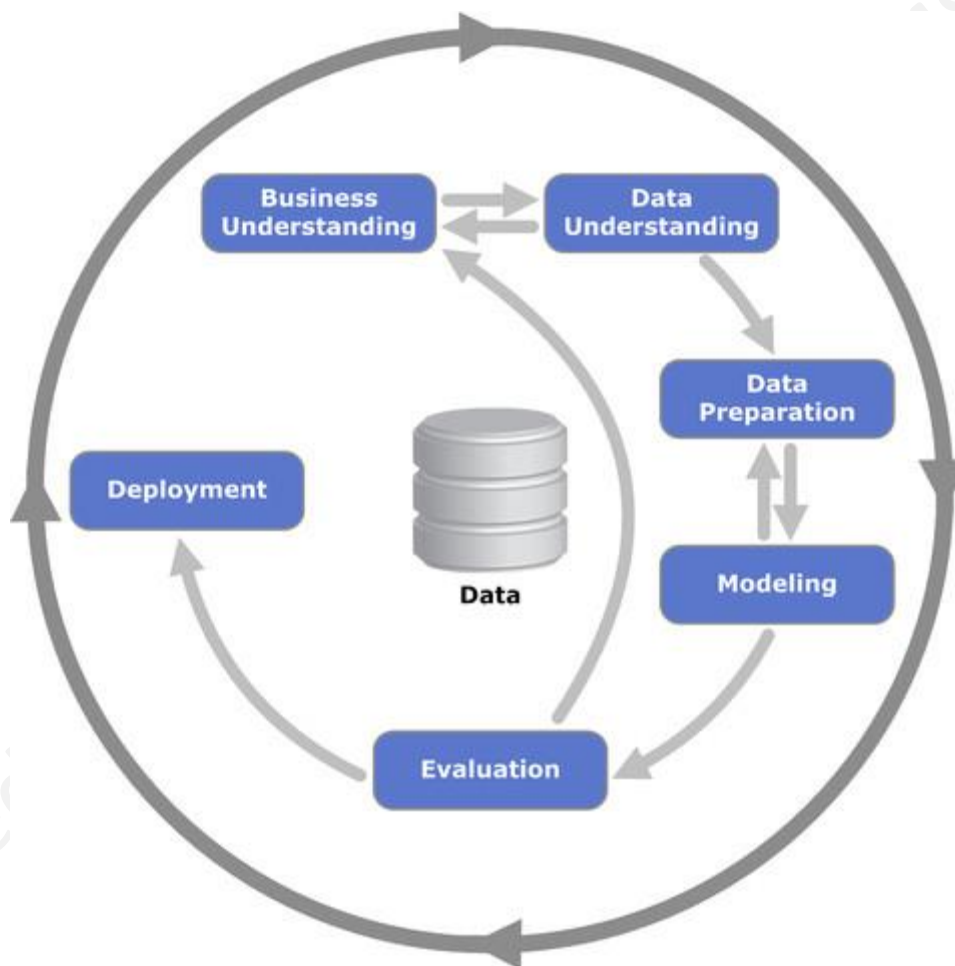
A brief history of business intelligence



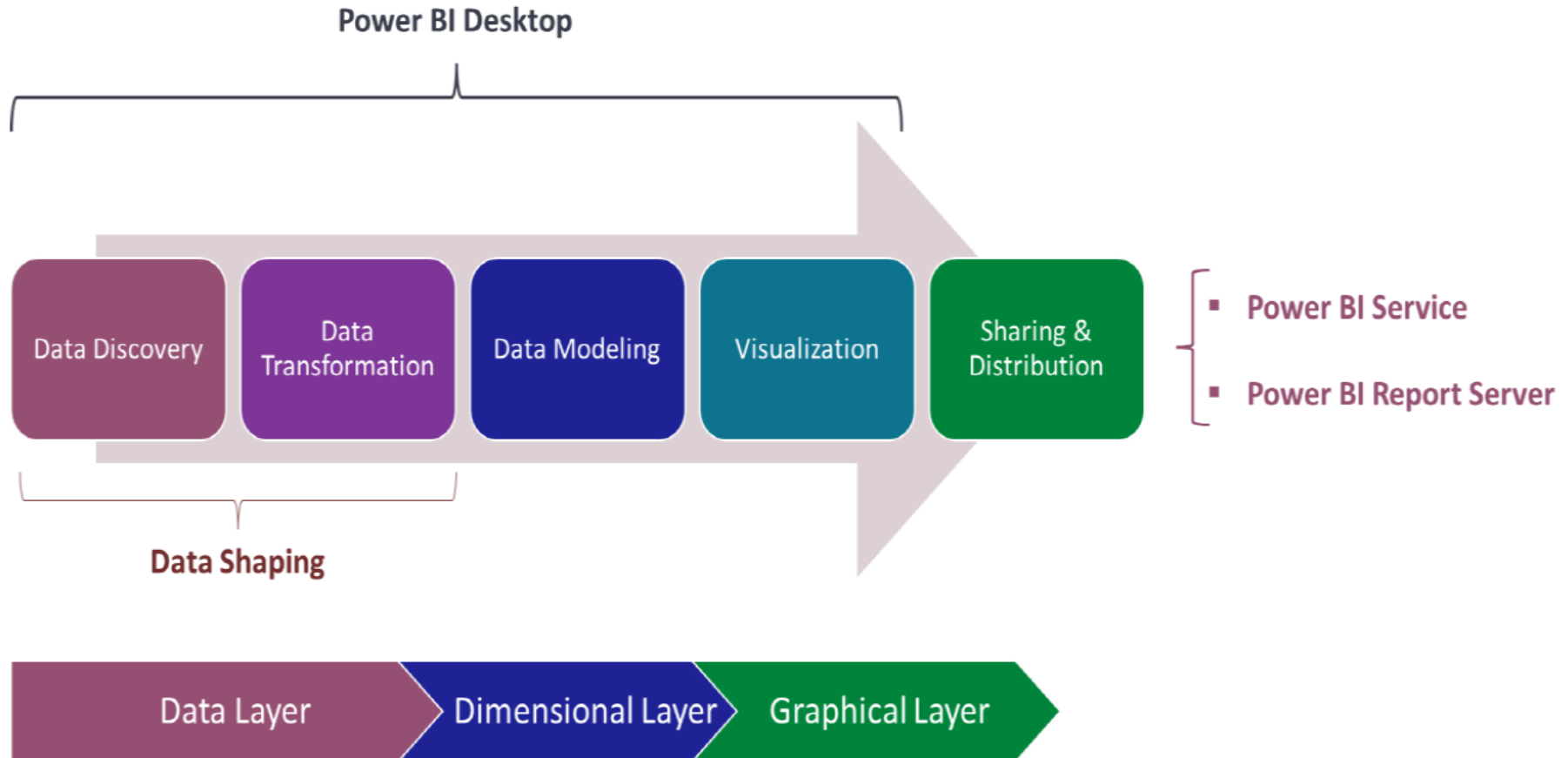
BI = Right data + Right time + Right person



Data development process



Report development process



Steps of the course

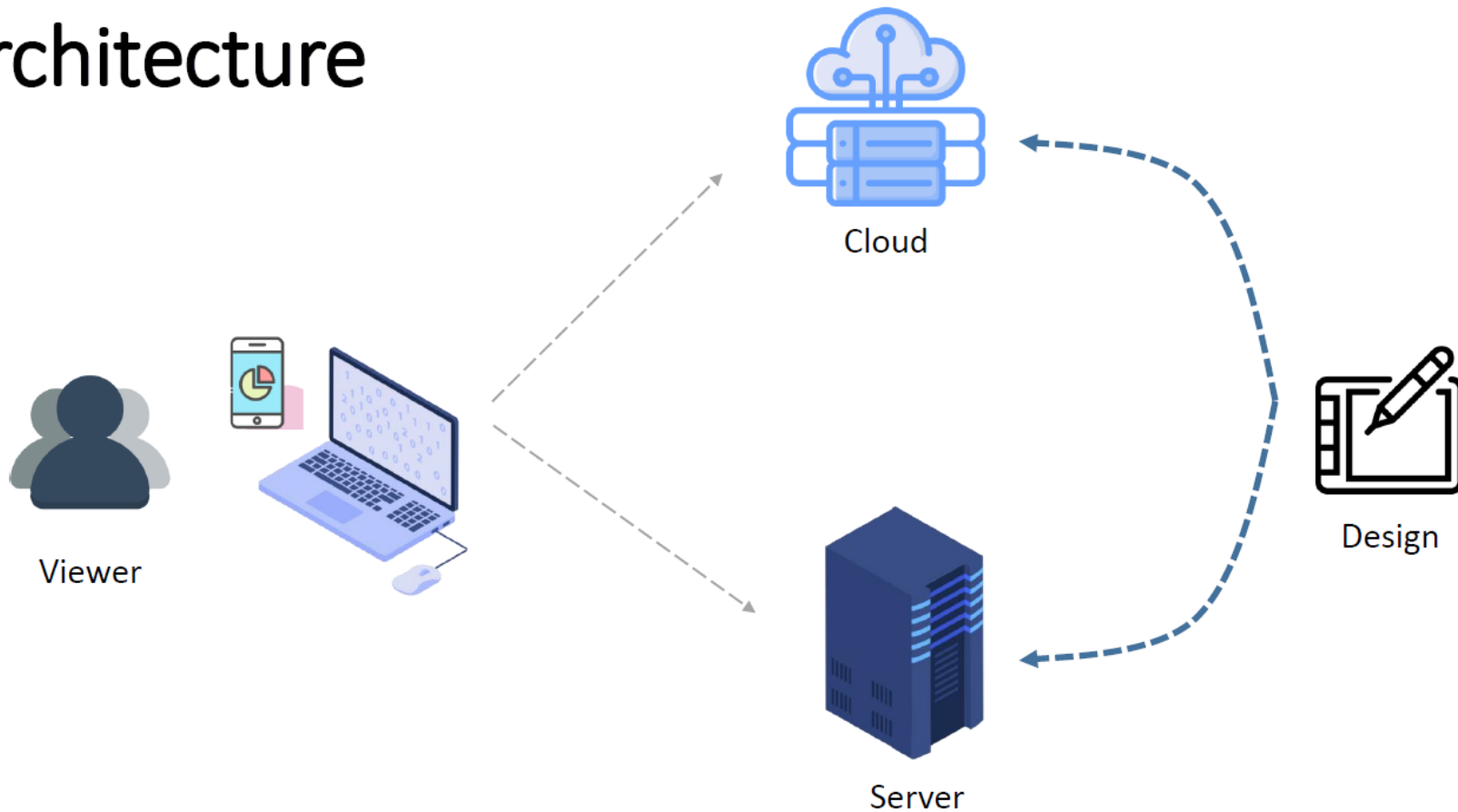


	Phase1	Phase2	Phase3	Phase4
Prepare the data				
Get data from different data sources				
Clean, Transform, and load the data				
Model the data				
Design a data model				
Develop a data model				
Create a model calculations by using DAX				
Optimize model performance				
Visualize and analyze the data				
Create reports				
Create dashboards				
Enhance reports for usability and storytelling				
Identify patterns and trends				
Deploy and maintain Assets				
Manage files and datasets				
Manage workspaces				

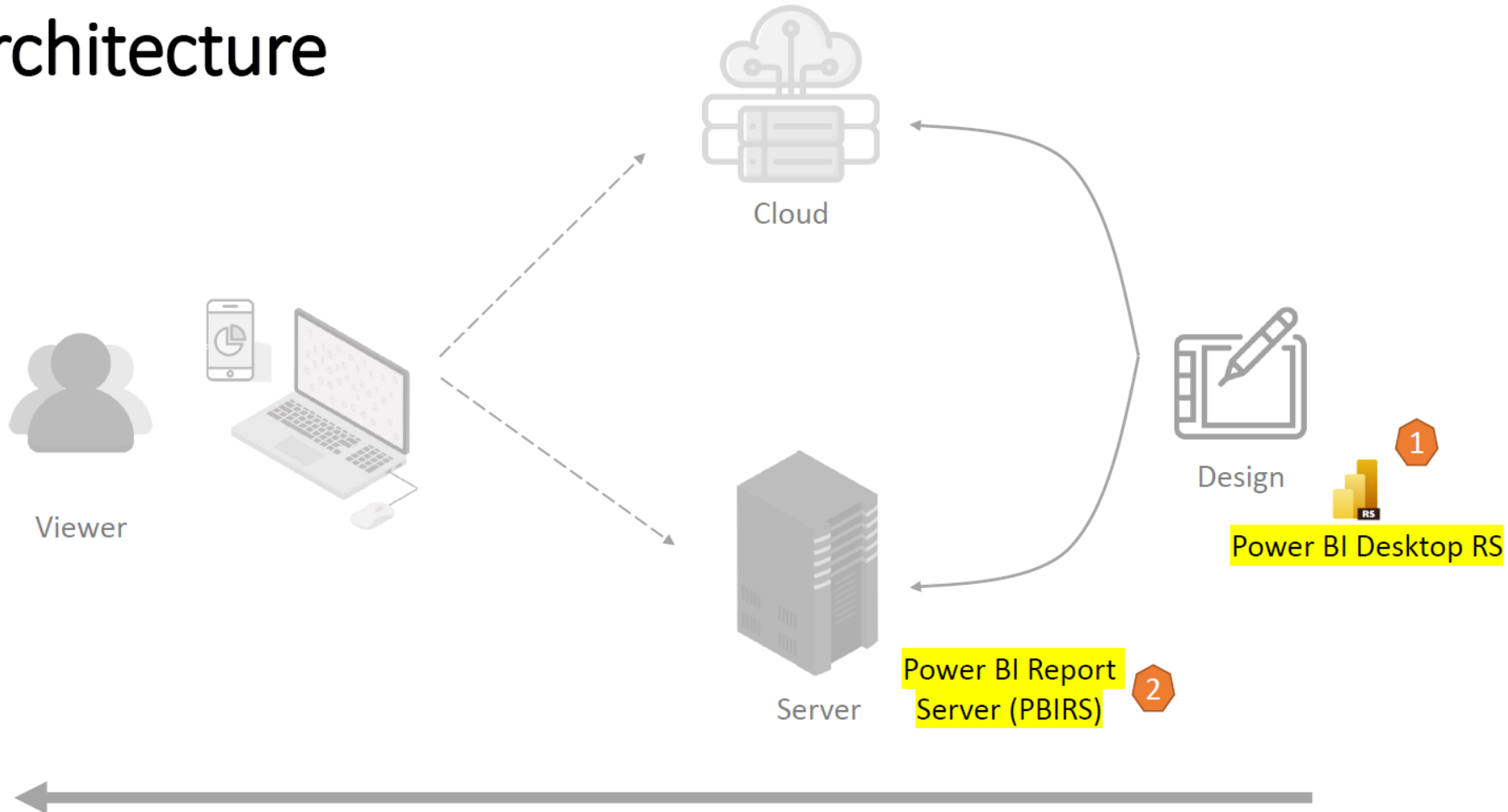
BI (Business Intelligence)



Architecture



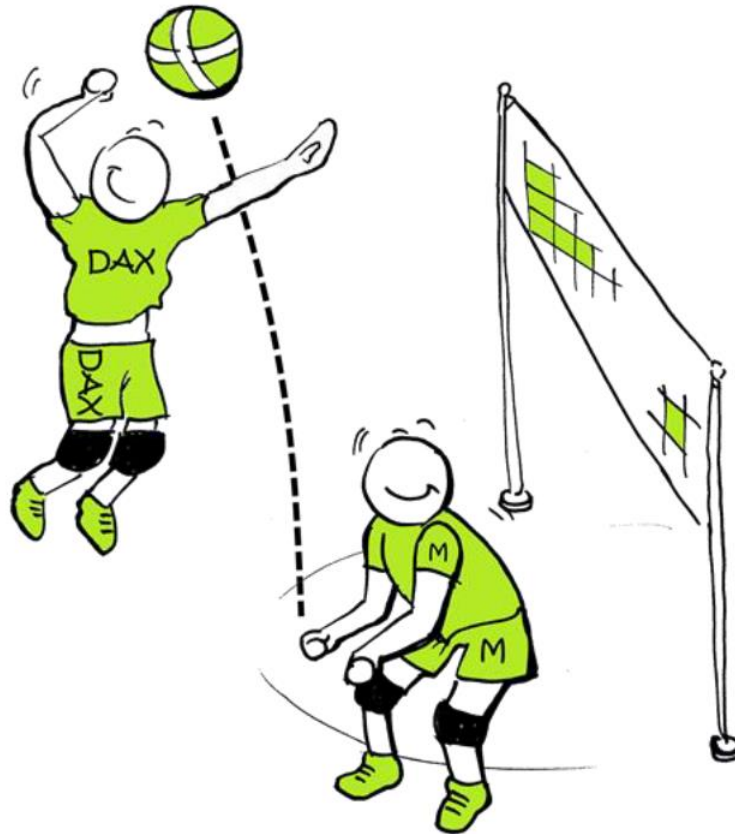
Architecture

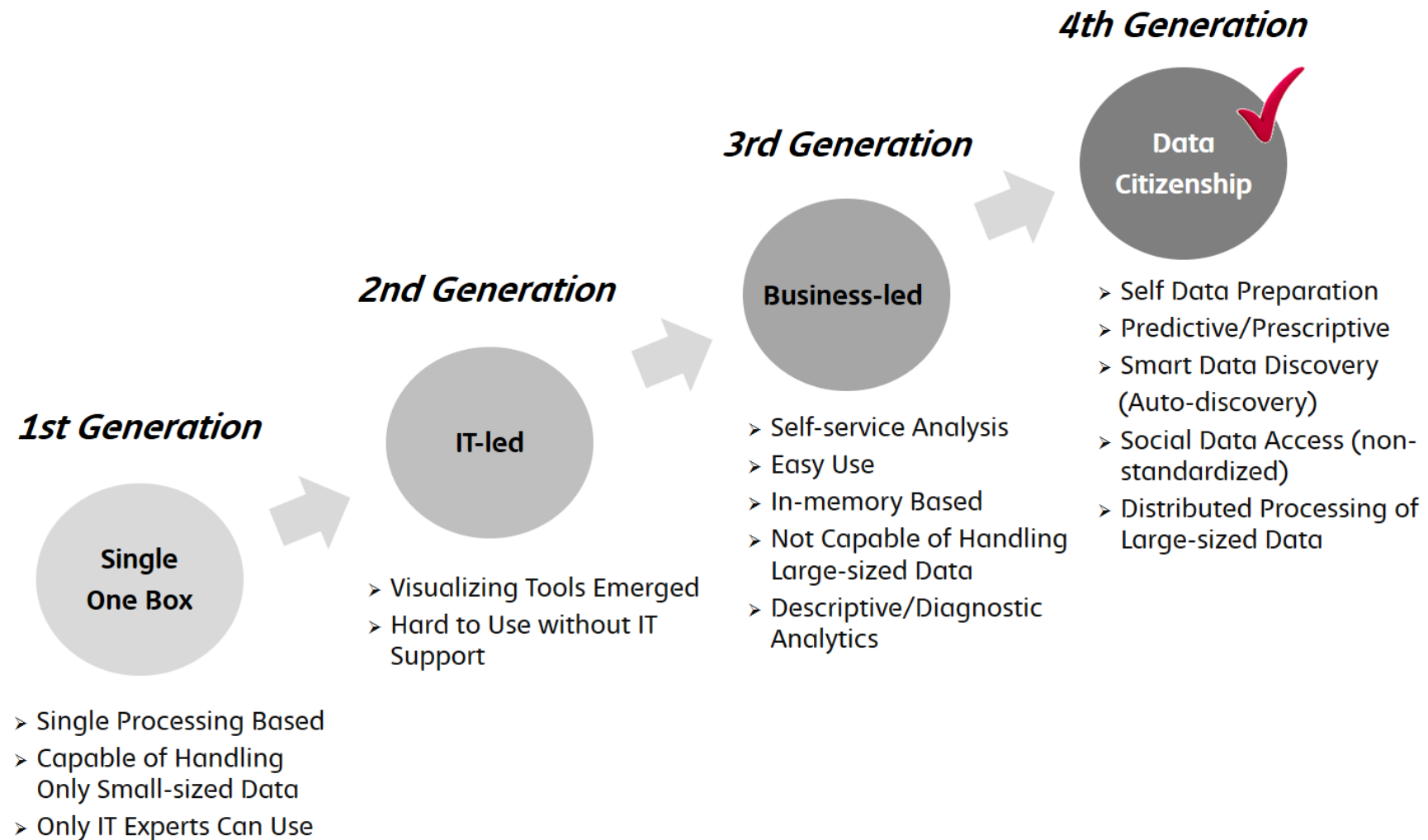


Power BI Desktop Elements

- 
1. Get data (Data source)
 2. Power Query (M) (Clean & Transform)
 3. Data Model (Relationship & DAX)
 4. Report (Visualization)

M or DAX





BI Tools

- **Traditional**

- SQL Server BI
 - SSIS, SSAS, SSRS
- Oracle BI

- **Self-service**

- Power BI
- QlikView
- Tableau

BI tools: Three Generations

Traditional BI

Business user gathers requirements for a report or a dashboard.

User submits request to data team

Data team extracts the data & loads it into a data warehouse

Data team creates a data model

User approves report or dashboard, or requests changes.



Self-service BI

Data team gathers user requests for self-service platform

Self-service tool implemented, giving business users access to data.

Business user directly accesses data

Business user selects which data to include

User builds his own report/dashboard



Augmented Analytics

Business user defines his data needs for a given report

User creates a self service data pipeline

The automated pipeline extracts data from various sources and transforms it into the right format

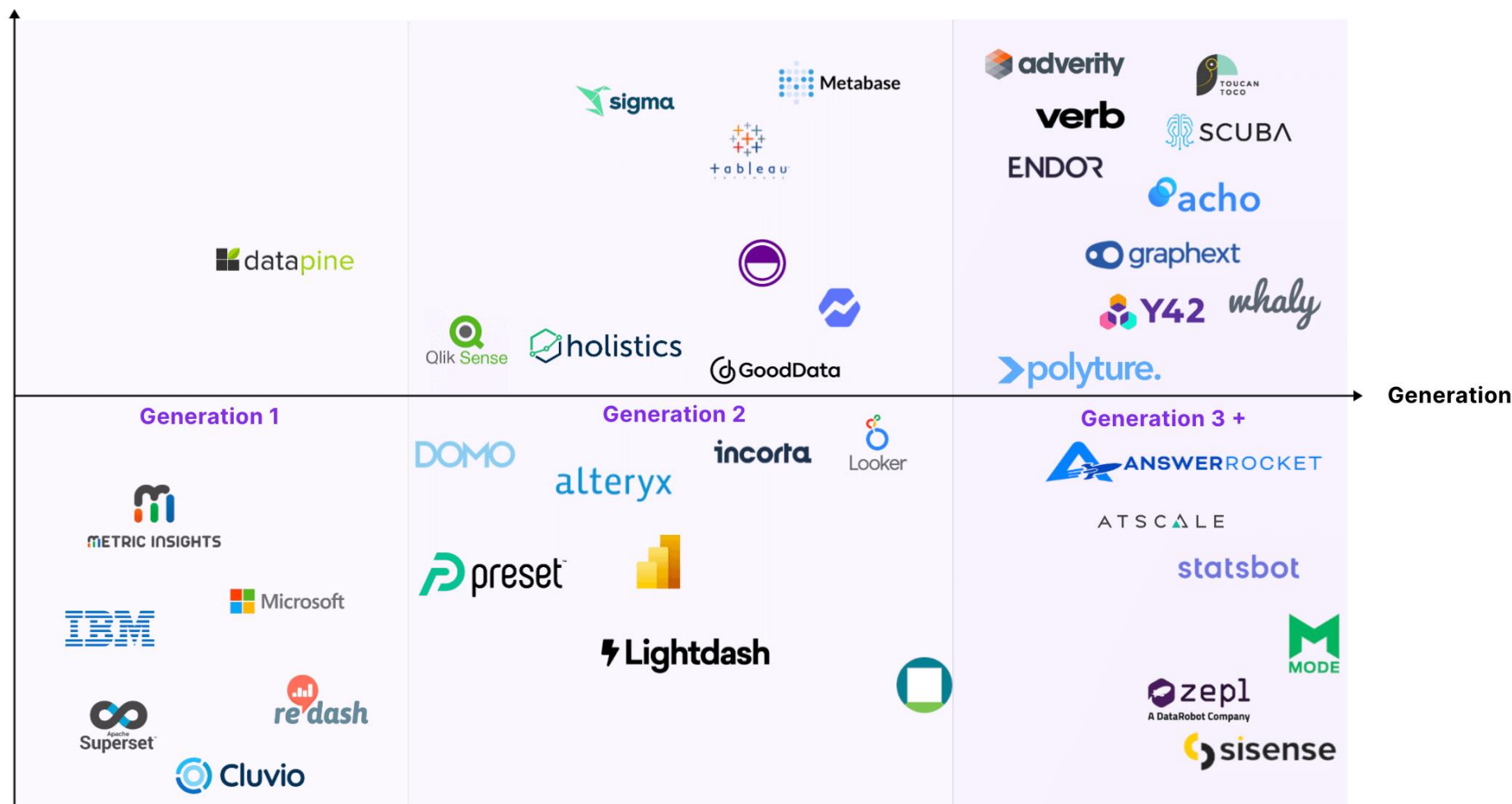
The automated pipeline loads data into the data warehouse

User builds his own report/dashboard



BI tools: Three Generations

Business users

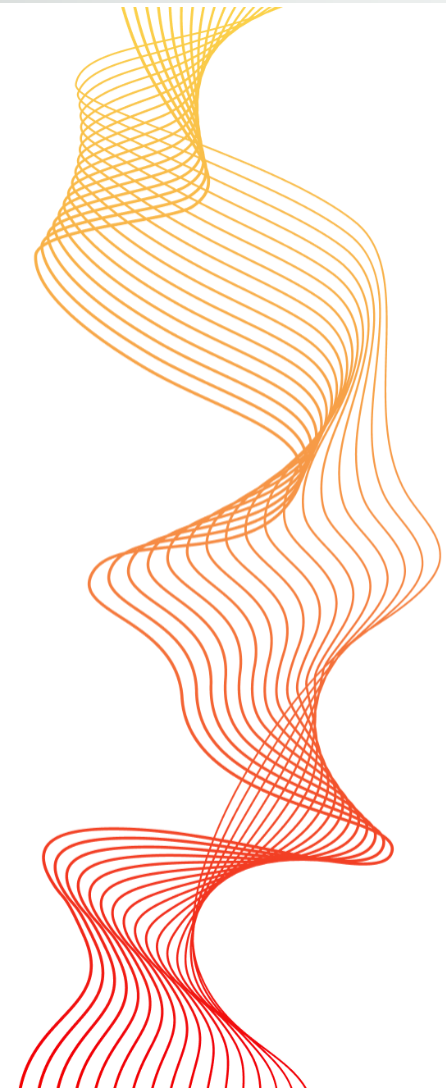


Technical users

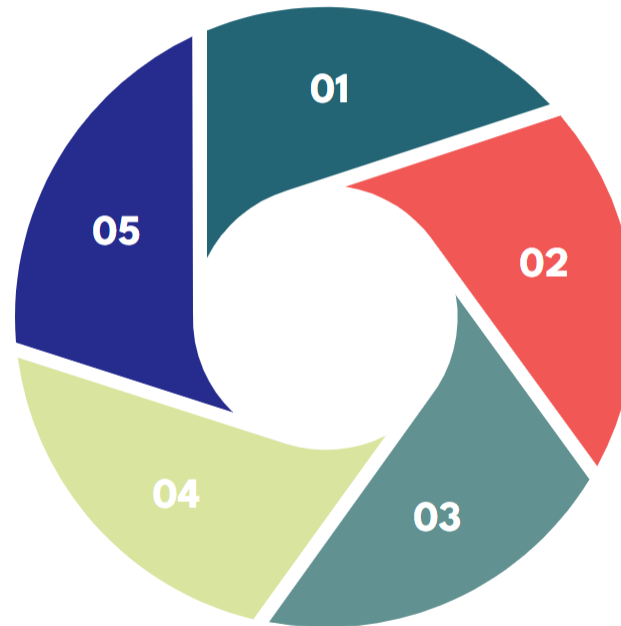


BI 1.0: Traditional BI

This presentation provides an overview of traditional Business Intelligence (BI) and its limitations. It highlights the challenges faced by businesses when using traditional BI approaches and introduces the need for a more modern solution.



Traditional BI



Answering new questions requires time and technical skills.

Traditional BI relies on static dashboards composed of visualizations.

It is a database-centric approach to analyzing data.

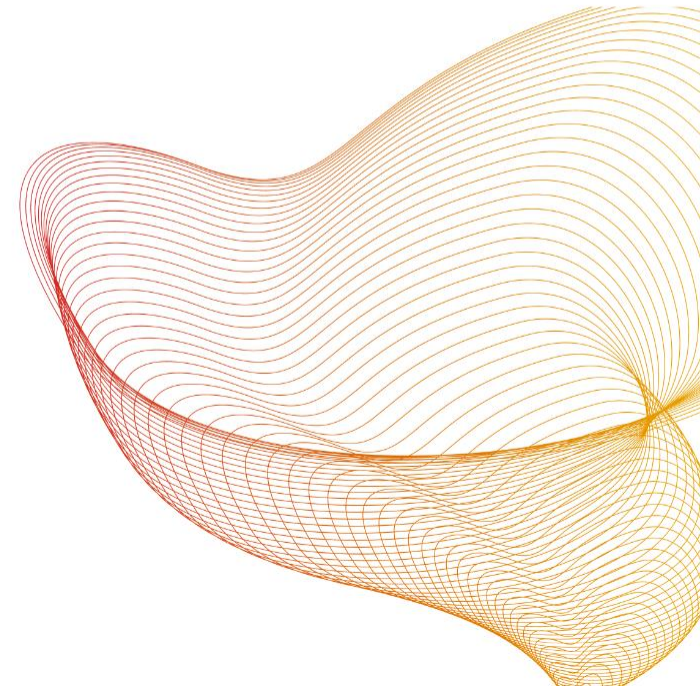
Big tech companies like Microsoft, IBM, Oracle, and SAP were leaders in this BI era.

Traditional BI techniques are outdated and no longer useful for modern-day businesses.



Traditional BI Approaches

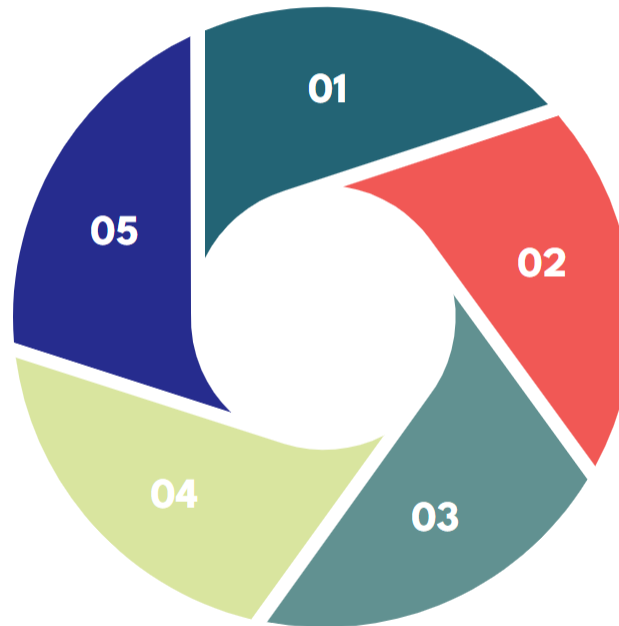
- Reporting and Dashboards: Provides an overview of business data and its relation to operations.
- Allows data manipulation, exploration, and report creation for sharing.
- Data Warehousing: Involves storing all company data in one accessible place.
- Enables analysis of large data volumes and advanced reporting functions.



Limitations of Traditional BI

Only technical profiles can navigate complex, code-heavy platforms.

SQL, a language known by technical profiles, is used for querying data.



Operational teams heavily depend on data teams for insights.

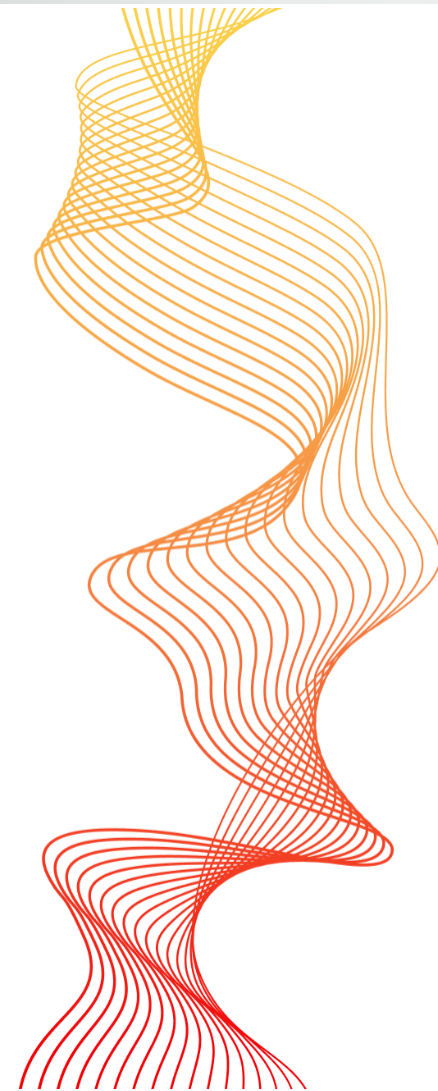
Data teams act as bottlenecks for data-related questions.

Business users often face challenges in obtaining timely and relevant reports.



BI 2.0: Self-service

This presentation discusses the evolution of BI tools and the progression towards self-service analytics.



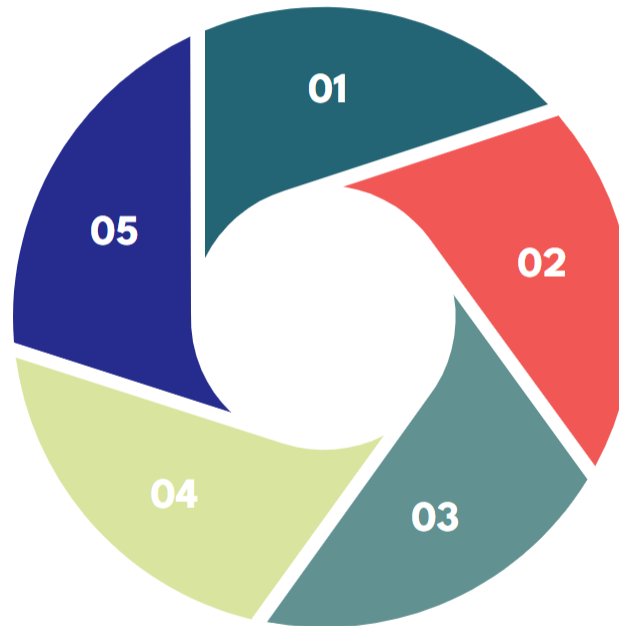
Introduction

Self-service analytics platforms emerged as part of the second generation.

The first generation of BI tools had limitations and reliance on data teams.

Second-generation BI tools aimed to address these issues.

This presentation highlights the benefits of self-service analytics.



Users could update dashboards and generate reports themselves.



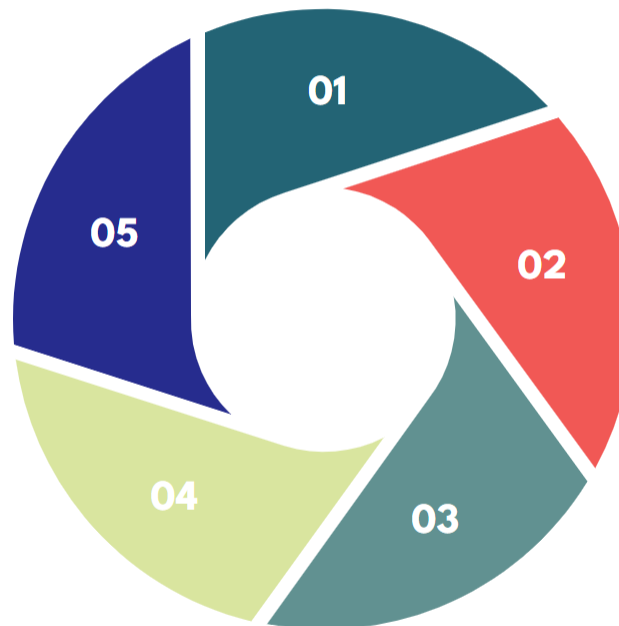
Challenges of the First Generation

- Static reports needed manual updating and reliance on data teams.
- Business users had to wait for weeks or months to get data insights.
- Tools were difficult to use and required SQL knowledge.
- Users spent time learning and figuring out data import/extraction.
- Limited discovery and visualization capabilities hindered business insights.



Advancements in the Second Generation

Non-technical users could generate reports and dashboards independently.



Dynamic dashboards and scorecards replaced static reports.

Self-service analytics platforms allowed users to access data easily.

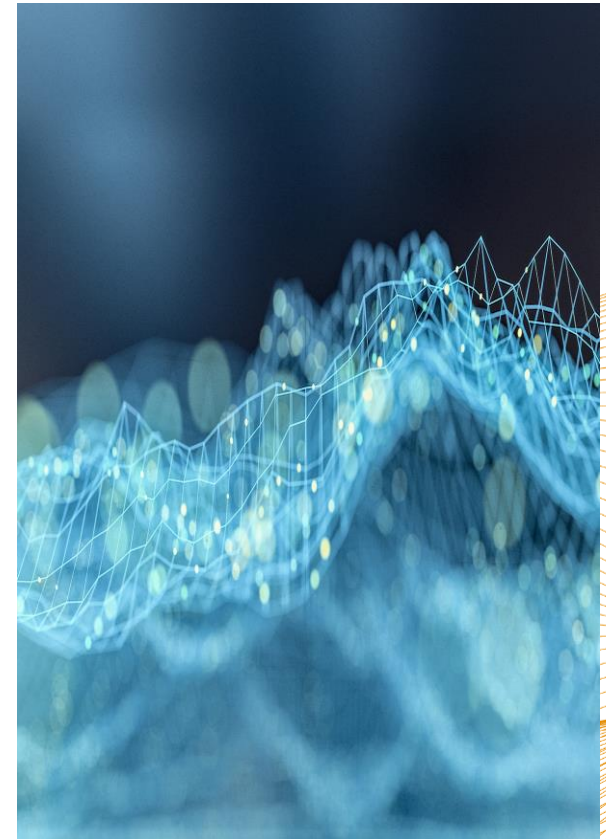
Tools became more user-friendly and intuitive.

Business users could get insights without relying on data teams.



Moving Towards the Third Generation

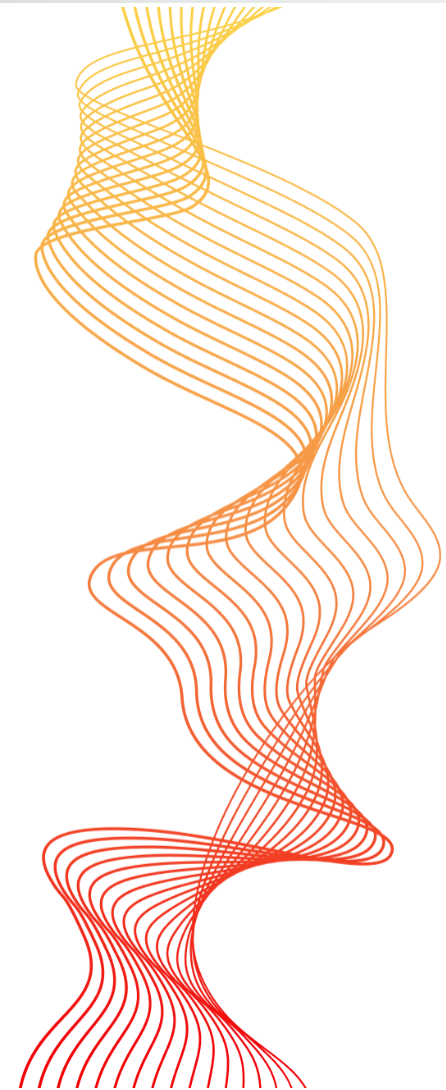
- Second generation tools still relied on data teams for data preparation.
- Third generation BI tools aim to solve this dependence.
- Business teams seek selfsufficiency in data preparation and modeling.
- Advancements in automation and AI contribute to selfservice capabilities.
- The future of BI tools lies in empowering business users further.



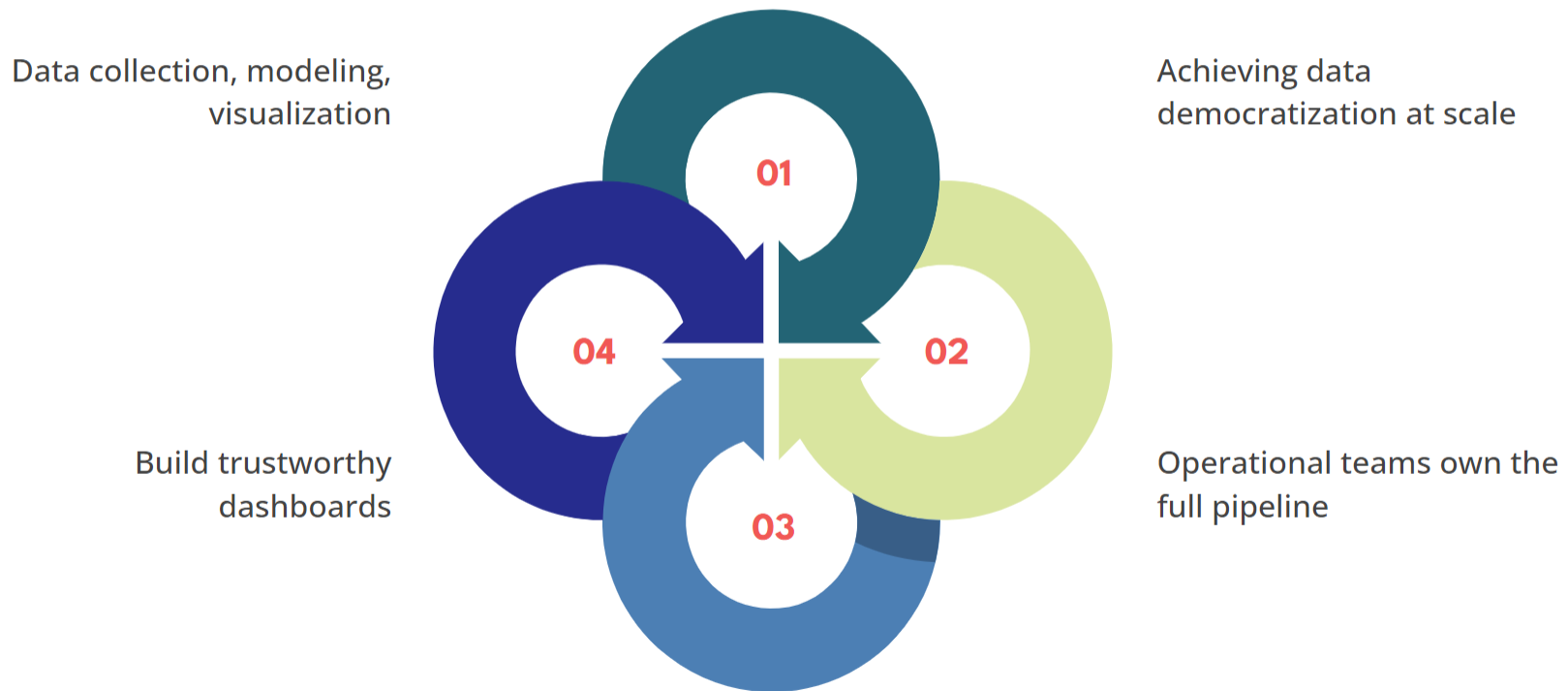


BI 3.0: Augmented analytics

This presentation provides an overview of augmented analytics in the third generation of Business Intelligence (BI). It discusses the benefits of augmented analytics for operational and technical teams.



Augmented Analytics for Operational Teams





Augmented Analytics for Technical Teams

- Enhance capabilities of BI tools
- Find insights beyond traditional analytics
- Utilize machine learning techniques
- Access advanced statistical analysis



Metrics VS KPIs

Metrics vs. KPIs – A Comparison

Metrics provide information that can be digested.

KPIs offer comparative insights that guide future actions.

Metrics are extracted and organized by activity or process.

KPIs are initiated by high-level decision makers.

Metrics can be viewed historically, but do not identify future action.

KPIs incorporate Goals and Objectives.

Metrics are static, and once extracted do not change.

KPIs can be evaluated and reset over time using the SMART methodology.

Metrics VS KPIs

KPIs	Metrics
● All KPIs are Metrics	● All Metrics are not KPIs
● KPIs give a holistic view of the performance of different functions in your organization	● Metrics give you a picture of how different individual activities rolled out within the functions are progressing
● KPIs tell you where exactly your teams stand with respect to the overall business goals	● Individual Metrics do not give any insights on their own
● Examples: Pre-sales KPIs, Email Marketing KPIs, Customer Success KPIs	● Examples: Open Rate, Conversations in the last 2 weeks, Deals lost last quarter

KPI vs OKR

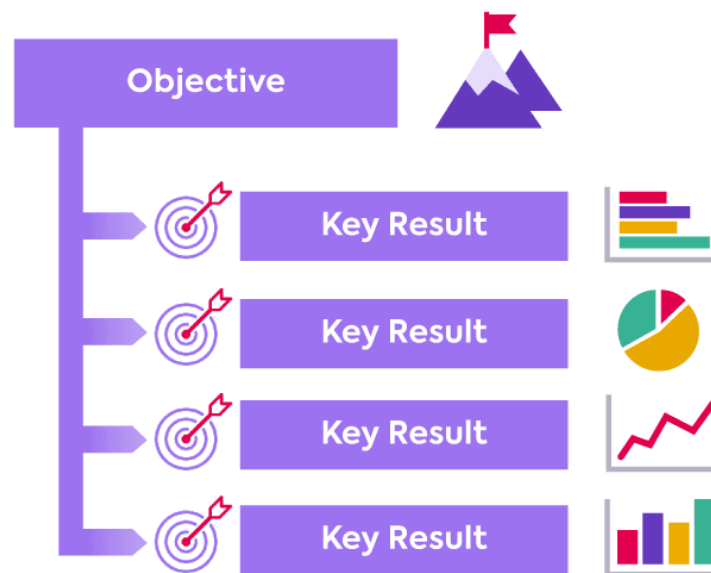
KPI

A single data point to track and monitor performance of a particular area



OKR

A framework to drive strategic objectives



LUCIDITY

KPIs vs OKRs: What's the Difference?

		Key Performance Indicators (KPIs)	Objectives and Key Results (OKRs)
WHAT		Numbers that track the operation of your business	Action-orientated goals and measures
FOUNDATION		Based on past results or future goals	Mission-based, aspirational and directional
DIRECTION		Monitors the “steady-state” and benchmarks	Audacious and bold, tied to mission
TRIGGERS		Actions are prompted when numbers are off track	Actions are taken as issues arise
DURATION		Measured on an ongoing basis	Time-bound, often quarterly
LIFESPAN		May be the same from quarter to quarter, year to year	Change from quarter to quarter, year to year

What Matters

Difference OKRs vs KPIs

OKRs	KPIs
Action-Orientated Goals (Objectives) and measures (Key Results)	Numbers that measure the health of your business
Define and measure advancements	Measures “Business as Usual”
Focuses on Outcome Outcome is something that happens as a consequence what you do	Focuses on Output Outputs are effects of your input Output is something what you do
Future-focused, directional	Could be a result or leading indicator (Looking at past results or future goals)
Should be aggressive and bold, help move the needle towards your goal / mission	Monitors the “steady-state” and provides benchmarks; Should prompt action when numbers are off track
Has a set time period (Quarter), changes form quarter to quarter	Usually measured on an on-going basis, may have many of the same KPIs from quarter to quarter

Example of OKRs for Project Managers

OKR to improve project management

OBJECTIVE

Improve project management effectiveness

KEY RESULT

Increase customer satisfaction from 65% to 80%

KEY RESULT

Bring project completion rate up by 10%

KEY RESULT

Reduce project timeline overruns by 20%

KEY RESULT

Keep budget variance below 25%

Power BI Desktop

Easily build Datasets, manage relationships, reports, and dashboards

- Free download
- Combines Power Query, Power Pivot, and Power View into a task optimized standalone application
- Outputs reports or easily publishes to Power BI Service
- Updated monthly



Transform and clean data

Getting your data ready to analyze can be time-consuming. We're on a mission to make it much simpler. Try the data shaping and modeling capabilities of Power BI Desktop and take back hours in your busy day.



Complete analytics life-cycle

The Power BI Desktop is an elegant end-to-end solution for building analytics. The Desktop has all the capabilities to quickly connect, shape, visualize, and share data insights through Power BI.

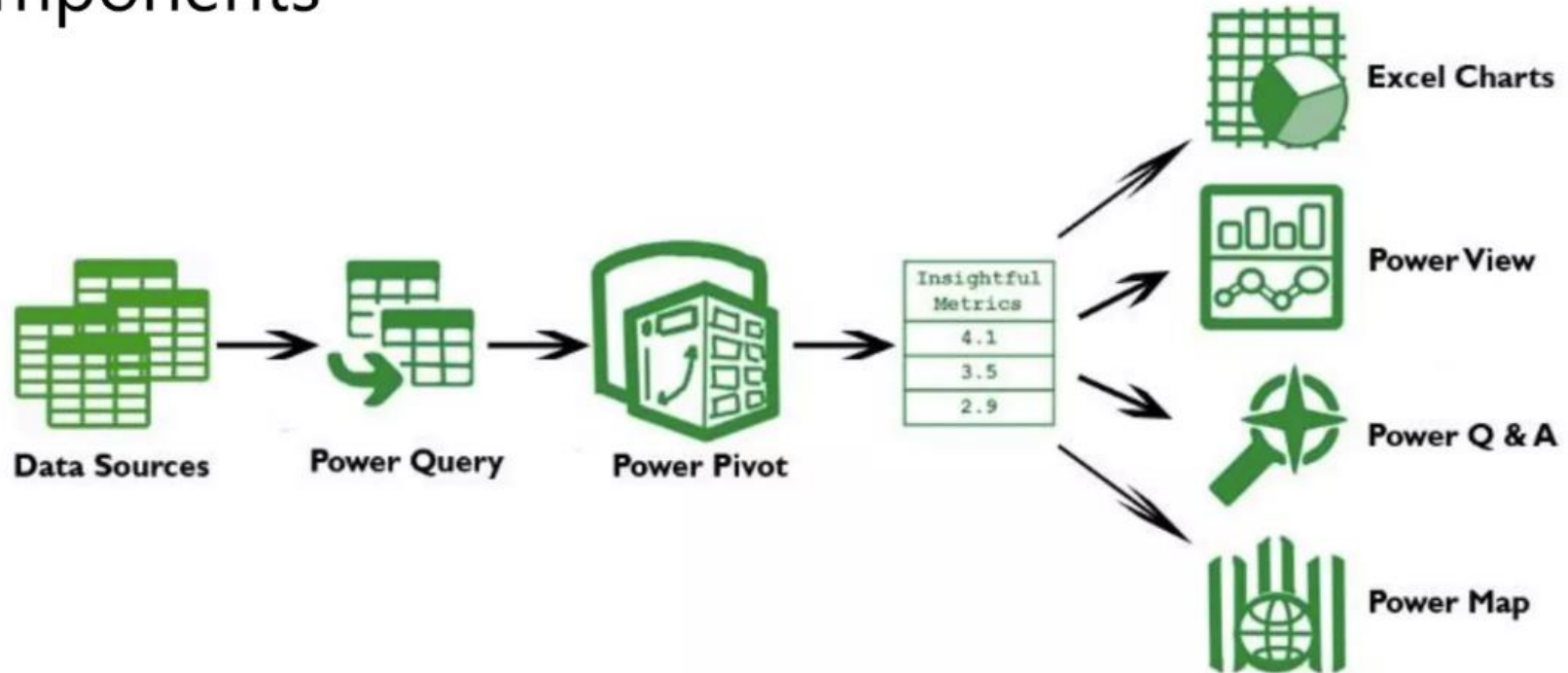


Design once, view anywhere

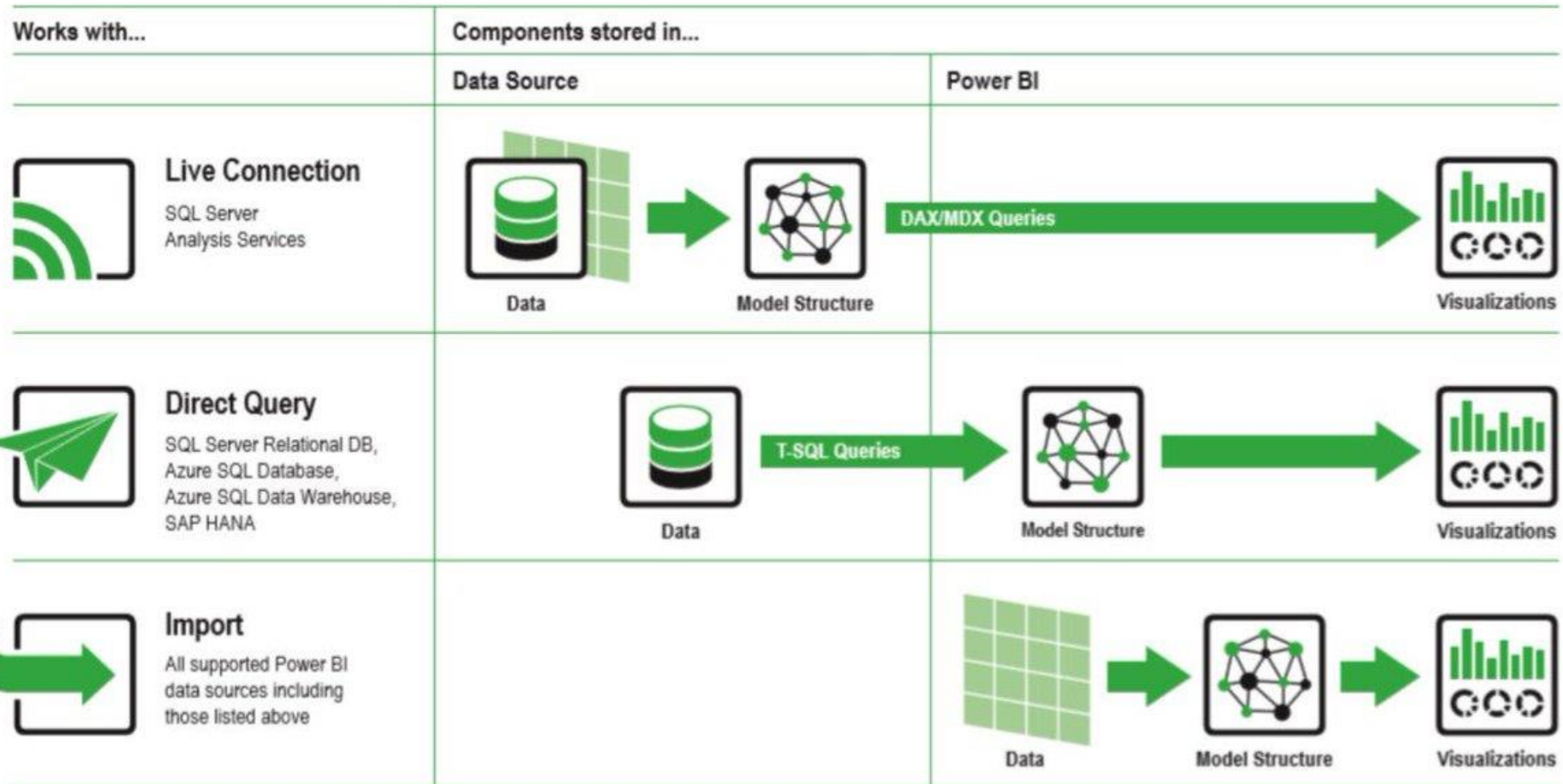
We know you need to get data into the hands of decision makers when and where they need it. Power BI makes publishing and sharing your beautiful interactive reports easy.

Components of Microsoft Power BI

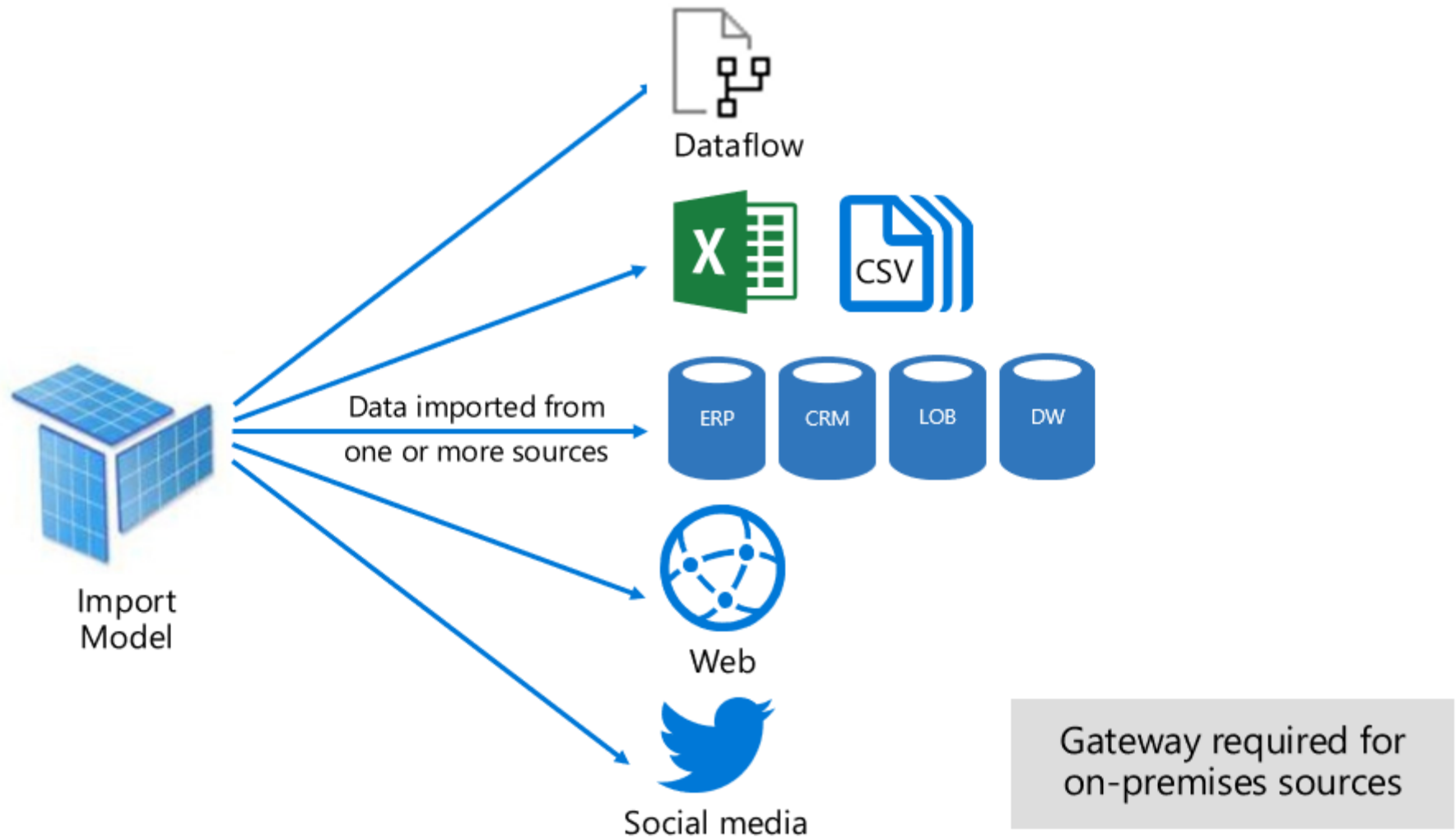
Components



Power BI, data connection types



Import mode



Direct Query



DirectQuery
Model

Live queries sent
to a single source



Gateway required for
on-premises sources

Direct Query



DirectQuery is only possible through a few data sources. Some of the data sources supporting DirectQuery from Power BI are listed here:

- Amazon Redshift
- Azure HDInsight Spark
- Azure SQL Database
- Azure SQL Data Warehouse
- IBM Netezza
- Impala
- Oracle Database
- SAP Business Warehouse
- SAP HANA
- Snowflake
- Spark
- SQL Server
- Teradata Database

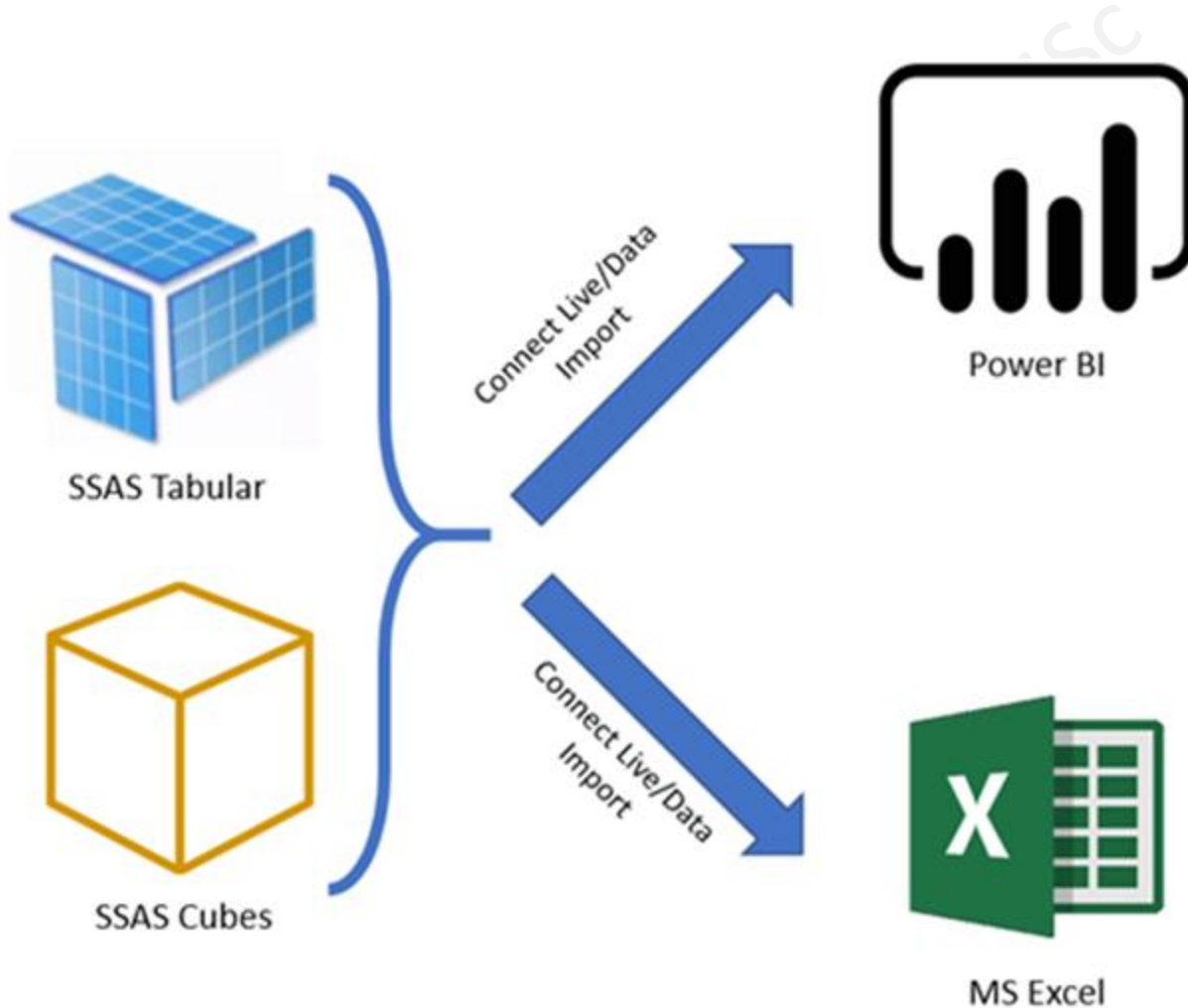
What is Live Connection?

Live Connection is very similar to DirectQuery in the way that it works with the data source. It will not store data in Power BI, and it will query the data source every time. However, it is different from DirectQuery.

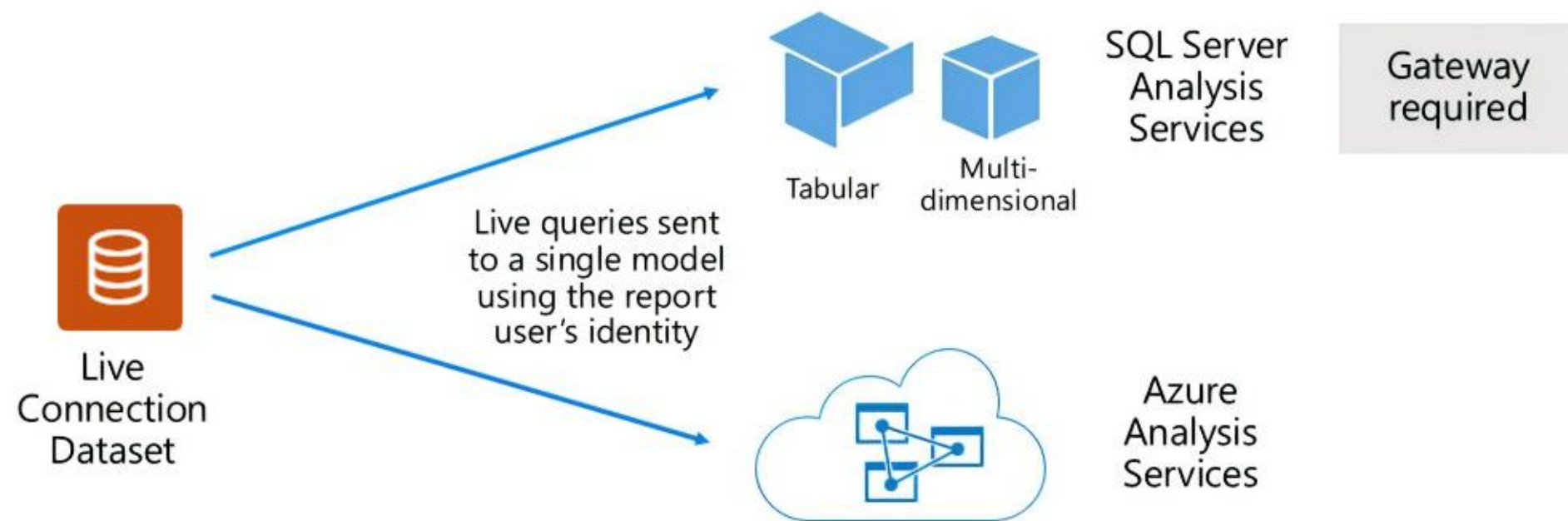
Live Connection is only supported for these data sources;

- Azure Analysis Services
- SQL Server Analysis Services (SSAS) Tabular
- SQL Server Analysis Services (SSAS) Multi-Dimensional
- Power BI Dataset in the Service

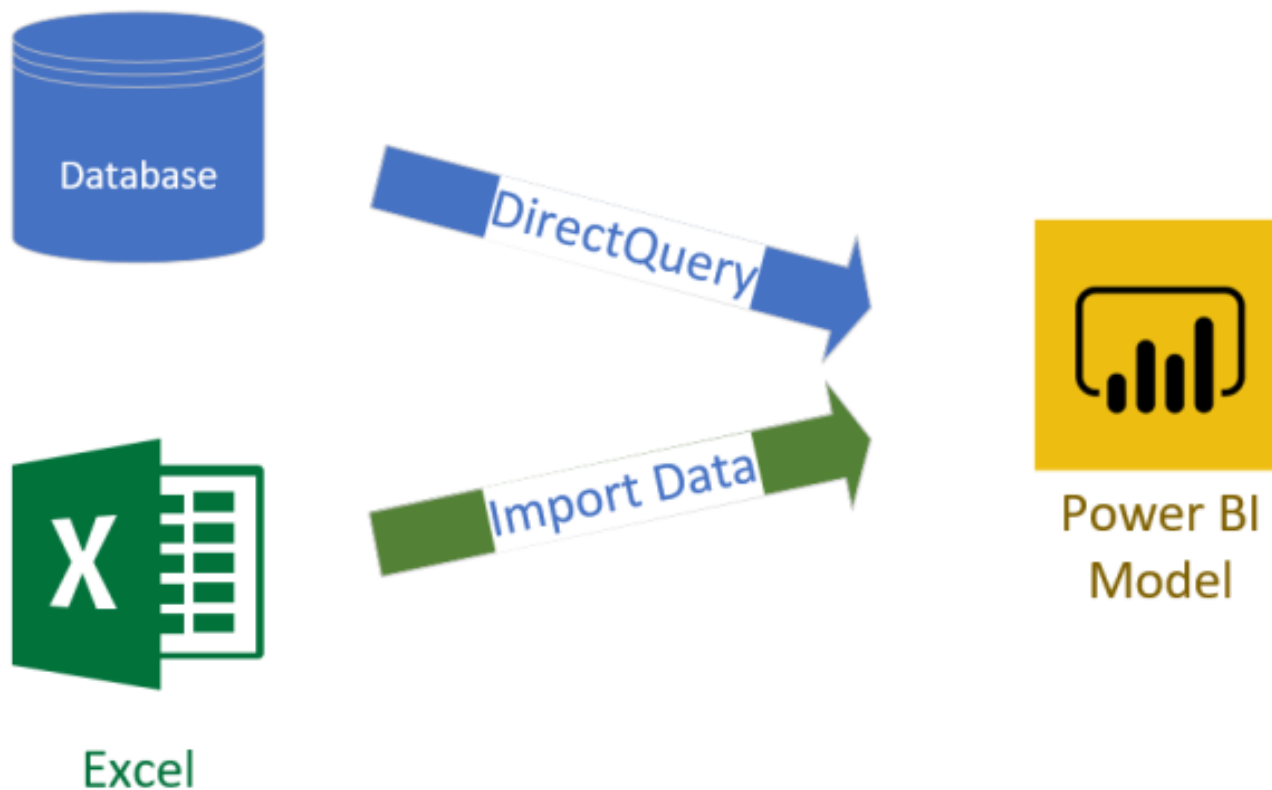
Live Connection



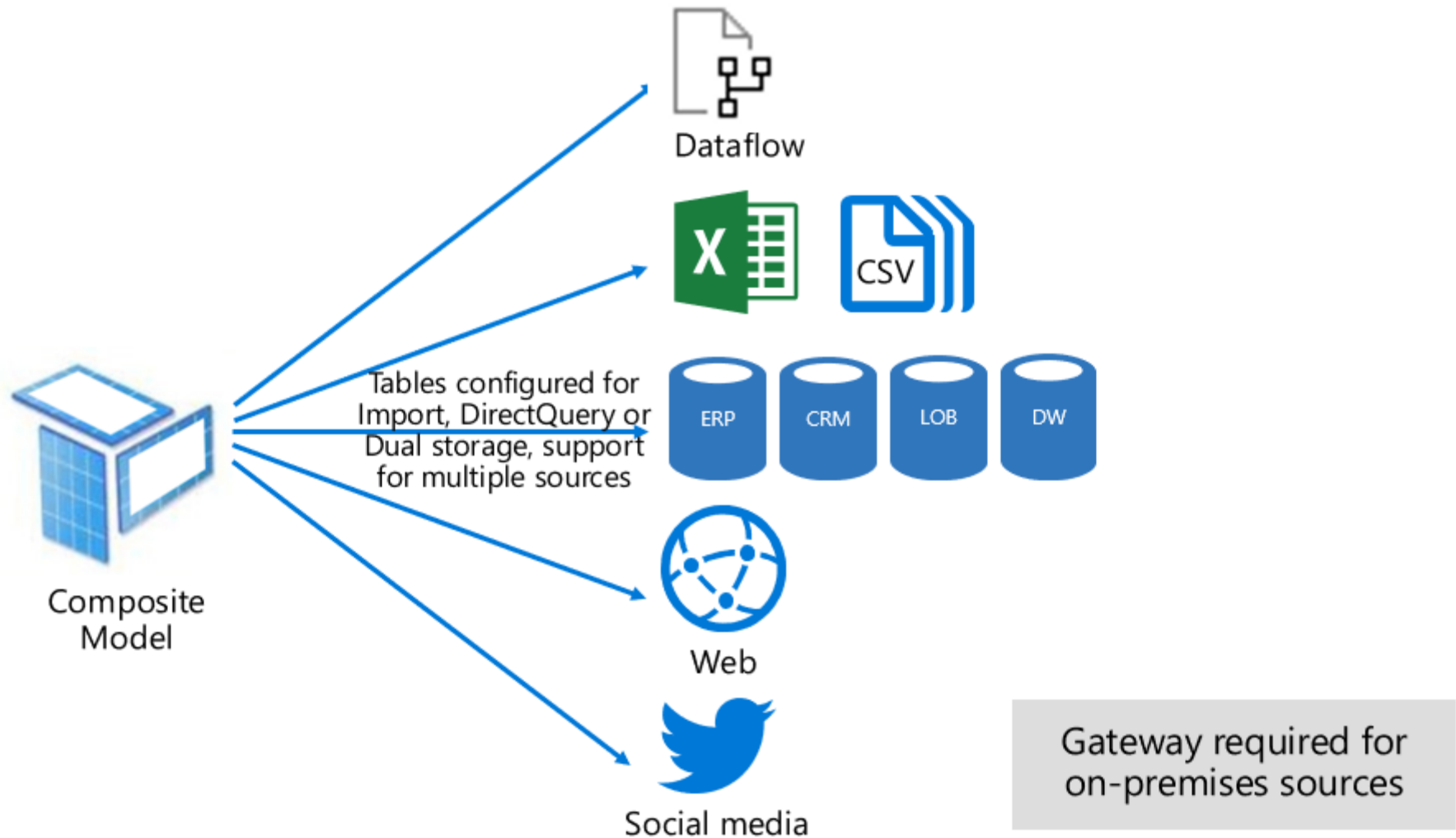
Live Connection



Composite Model in Power BI



Composite Model



What's a dataset?



- A dataset is something that you import or connect to. Power BI let's you connect to all sorts of datasets and bring all of it together in one place.
- ONE dataset...
 - can be used over and over. - can be used in many different reports.
 - Visualizations from that one dataset can display on many different dashboards.

What's a report?



- A Power BI report is one or more pages of visualizations (charts, graphs and images). All of the visualizations in a report come from a single dataset.
- ONE report...
 - can be associated with multiple dashboards (tiles pinned from that one report can appear on multiple dashboards).
 - can be created using data from one dataset. (the slight exception to this is that Power BI Desktop can combine more than 1 dataset into a single report and that report can be imported into Power BI)

Data visualization design

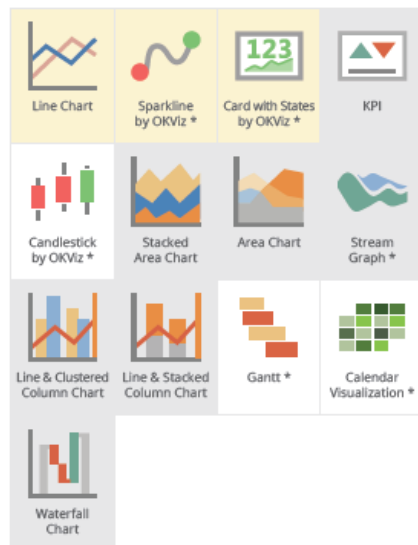
COMPARISON

Use these visuals when you want to display measures compared by its magnitude.



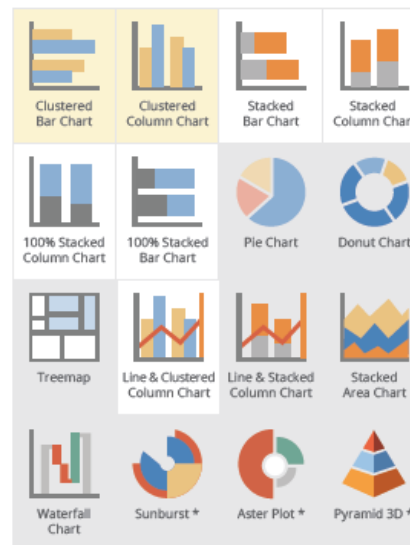
CHANGE OVER TIME

Use these visuals when you want to display the changing trend of measures.



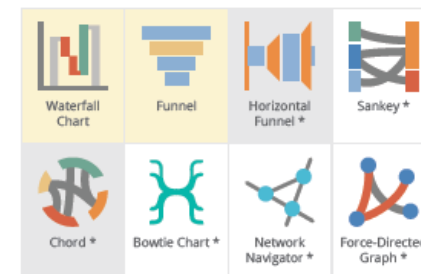
PART-TO-WHOLE

Use these visuals when you want to display parts that compose measures.



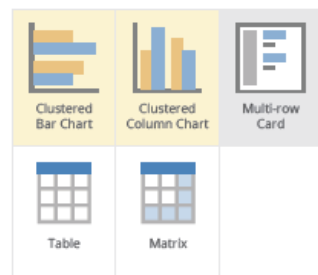
FLOW

Use these visuals when you want to display a flow or dynamic relations between measures.



RANKING

Use these visuals when you want to display measures by its rank order.



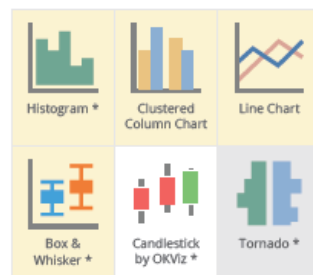
SPATIAL

Use these visuals when you want to display measures over spatial maps.



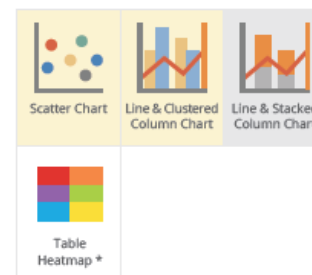
DISTRIBUTION

Use these visuals when you want to display the distribution of a measure.



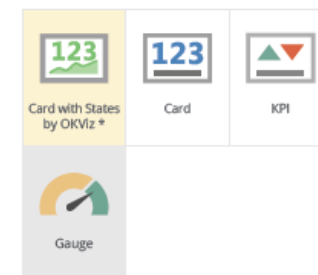
CORRELATION

Use these visuals when you want to display relations between measures.

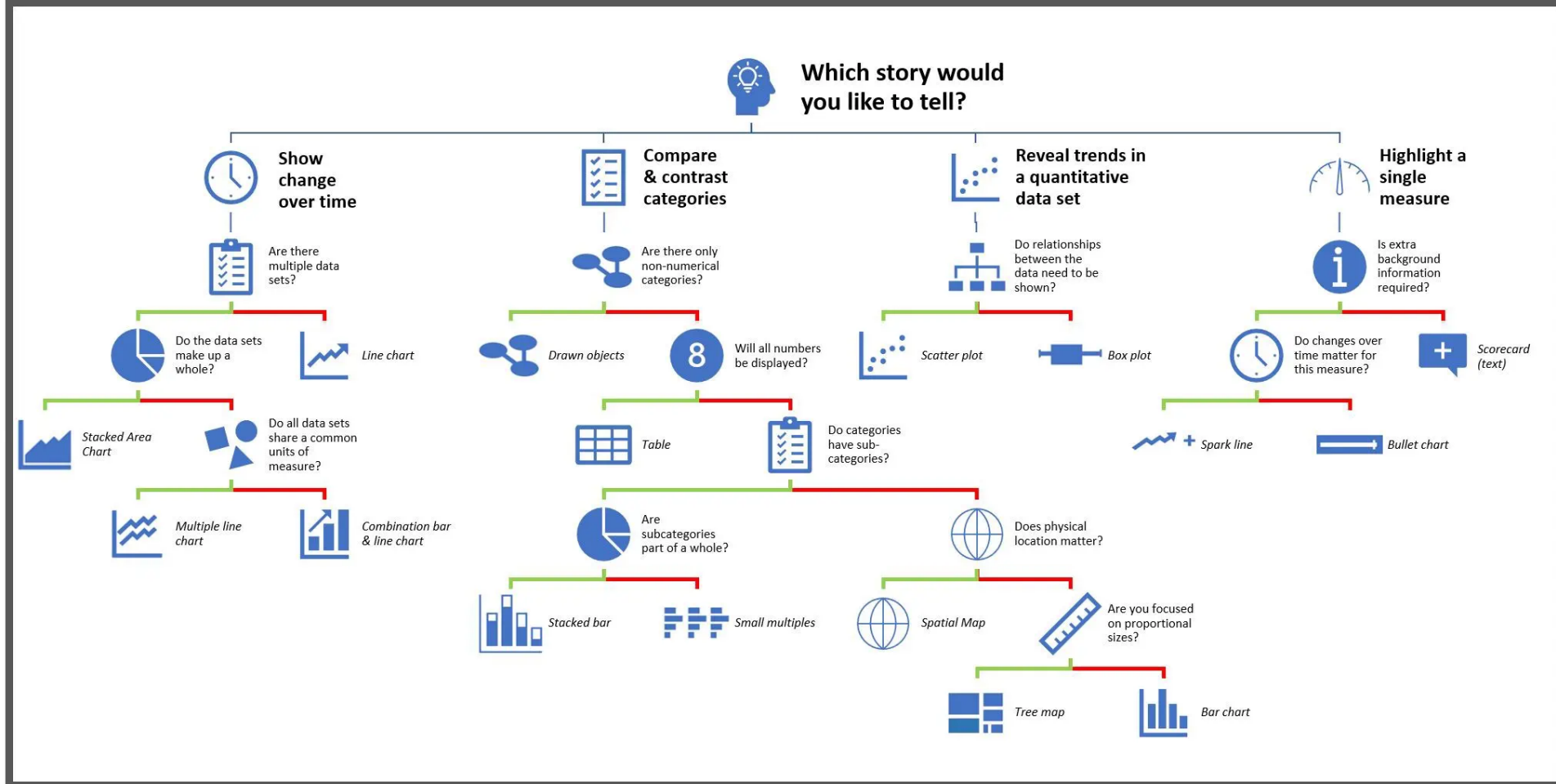


SINGLE

Use these visuals when you want to display a single value.



Data Story Visualization: A Decision Tree



Project Management Scenarios



The screenshot displays the Microsoft Power BI desktop application interface. At the top, the **Ribbon** is visible with tabs for File, Home, Insert, Modeling, View, Optimize, and Help. The Home tab is active, showing various toolbars like Clipboard, Data, Queries, Insert, Calculations, Sensitivity, and Share. The main workspace area is titled "Add data to your report" and "Once loaded, your data will appear in the Data pane." It features four buttons: "Import data from Excel", "Import data from SQL Server", "Paste data into a blank table", and "Try a sample dataset". Below these buttons is a link "Get data from another source →". A red box labeled "Views" is overlaid on the bottom center of the workspace. On the right side, the **Visualizations** pane is open, showing a list of chart types and options for "Values", "Drill through", "Cross-report", and "Keep all filters". A red box labeled "Pane" is overlaid on the bottom right of the Visualizations pane. The bottom status bar shows "Page 1" and a zoom level of 83%.

Project Management Scenarios

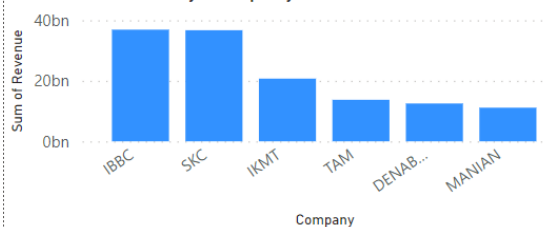
Scenario No1:

Rank	Company	Revenue	Headquarter
1	IBBC	36901592927	Qazvin
2	SKC	36715835611	Tehran
3	IKMT	20719450493	Alborz
4	TAM	13719445693	Tehran
5	DENABEHRIZ	12501592927	Qazvin
6	MANIAN	11112317431	Qazvin

Rank	Company	Sum of Revenue	Sum of Revenue by Revenue
1	IBBC	36,901,592,927	
2	SKC	36,715,835,611	
3	IKMT	20,719,450,493	
4	TAM	13,719,445,693	
5	DENABEHRIZ	12,501,592,927	
6	MANIAN	11,112,317,431	
Total		131,670,235,082	

Headquarter
Alborz
Qazvin
Tehran

Sum of Revenue by Company



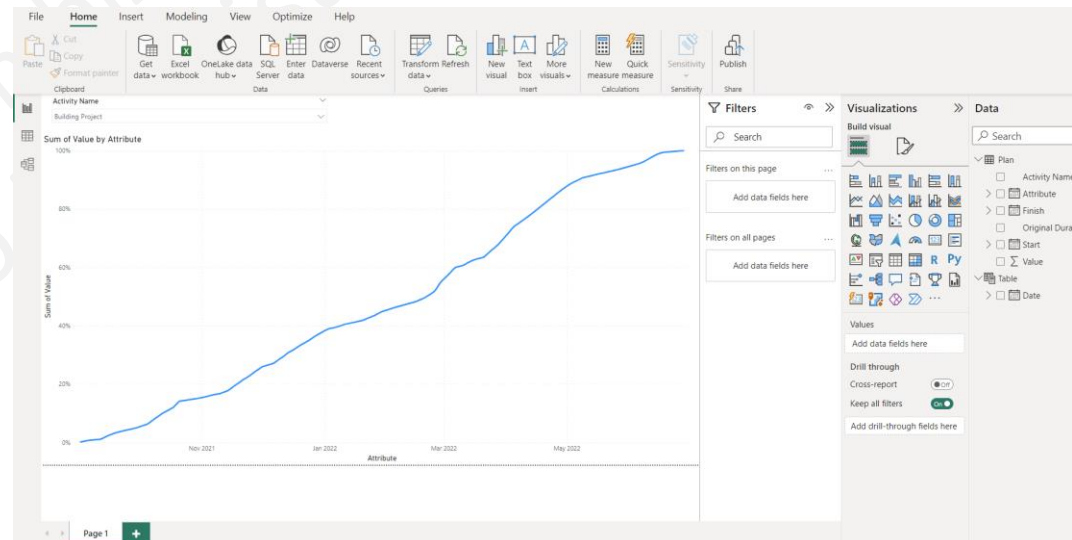
132bn

Sum of Revenue

Project Management Scenarios

Scenario No2:

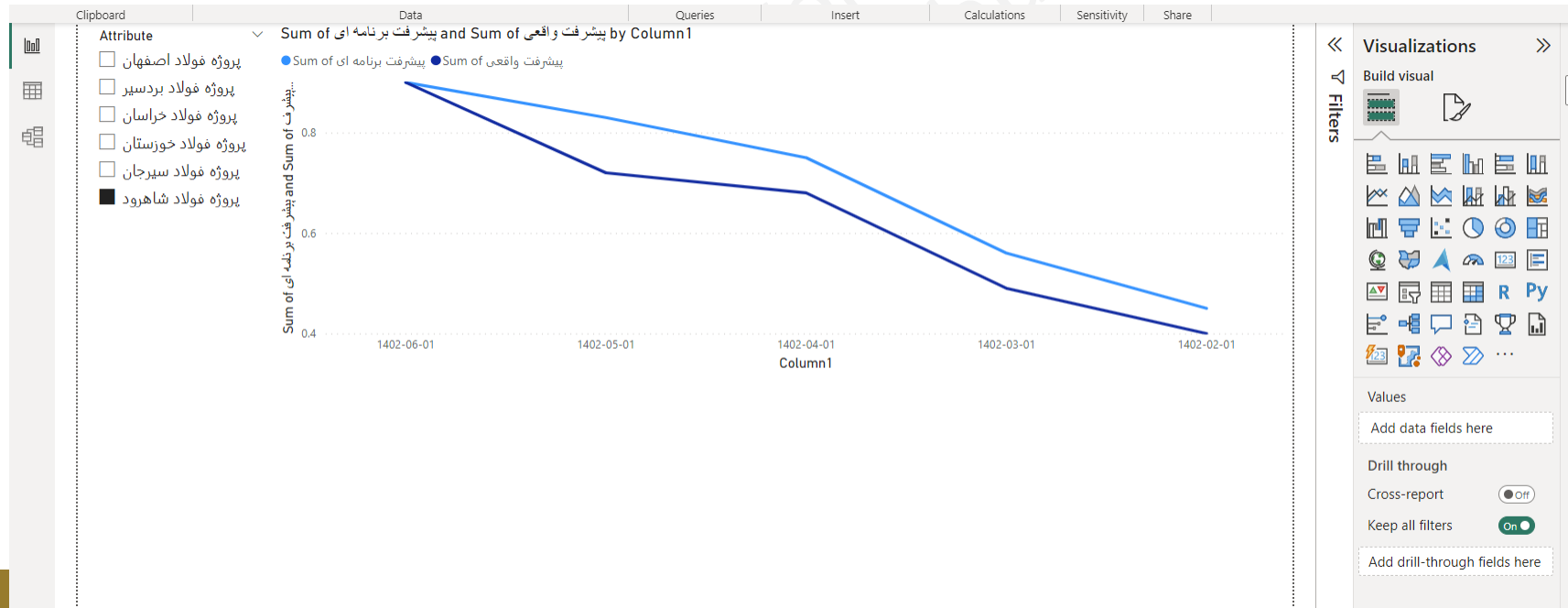
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
Activity Name	Original Duration	Start	Finish	2-Sep-21	3-Sep-21	4-Sep-21	5-Sep-21	6-Sep-21	7-Sep-21	8-Sep-21	9-Sep-21	10-Sep-21	11-Sep-21	12-Sep-21	13-Sep-21	14-Sep-21	15-Sep-21	16-Sep-21
1 Building Project	300d	2-Sep-21	28-Jun-22	0.14%	0.28%	0.42%	0.57%	0.71%	0.84%	0.90%	0.97%	1.03%	1.09%	1.14%	1.17%	1.19%	1.20%	1.21%
3 North Site	290d	2-Sep-21	18-Jun-22	0.17%	0.33%	0.50%	0.66%	0.83%	0.92%	1.01%	1.10%	1.18%	1.26%	1.33%	1.39%	1.43%	1.45%	1.46%
4 Civil	205d	2-Sep-21	25-Mar-22	0.47%	0.95%	1.42%	1.89%	2.37%	2.62%	2.88%	3.14%	3.39%	3.65%	3.88%	4.09%	4.28%	4.45%	4.60%
5 Access Road	23d	2-Sep-21	24-Sep-21	3.00%	6.00%	9.00%	12.00%	15.00%	15.83%	16.67%	17.50%	18.33%	19.17%	20.00%	20.83%	21.67%	22.50%	23.33%
6 Leveling	5d	2-Sep-21	6-Sep-21	20.00%	40.00%	60.00%	80.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
7 Compaction	6d	7-Sep-21	12-Sep-21	0.00%	0.00%	0.00%	0.00%	0.00%	16.67%	33.33%	50.00%	66.67%	83.33%	100.00%	100.00%	100.00%	100.00%	100.00%
8 Sub Base	4d	13-Sep-21	16-Sep-21	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	25.00%	50.00%	75.00%	100.00%	100.00%
9 Base	3d	17-Sep-21	19-Sep-21	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
10 Gravel	5d	20-Sep-21	24-Sep-21	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
11 Trap Handling	27d	25-Sep-21	21-Oct-21	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
12 Excavation	8d	25-Sep-21	2-Oct-21	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
13 Lean Concrete	3d	3-Oct-21	5-Oct-21	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
14 Rebaring	7d	6-Oct-21	12-Oct-21	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15 Formwork	6d	13-Oct-21	18-Oct-21	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
16 Concrete	3d	19-Oct-21	21-Oct-21	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
17 Trenches	56d	28-Sep-21	22-Nov-21	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
18 Excavation	10d	28-Sep-21	7-Oct-21	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
19 Lean Concrete	2d	8-Oct-21	9-Oct-21	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
20 Rebaring Footing	15d	10-Oct-21	24-Oct-21	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
21 Formwork Footing	10d	25-Oct-21	3-Nov-21	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
22 Concrete Footing	4d	4-Nov-21	7-Nov-21	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
23 Rebaring Wall	7d	8-Nov-21	14-Nov-21	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
24 Formwork Wall	5d	15-Nov-21	19-Nov-21	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
25 Concrete Wall	3d	20-Nov-21	22-Nov-21	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
26 Piping Foundation	62d	1-Oct-21	1-Dec-21	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
27 Excavation	9d	1-Oct-21	9-Oct-21	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%



Project Management Scenarios

Scenario No3:

نام پروژه	تاریخ نوع	1402-02-01		1402-03-01		1402-04-01		1402-05-01		1402-06-01	
		پیشرفت برنامه ای	پیشرفت واقعی	پیشرفت برنامه ای	پیشرفت واقعی	پیشرفت برنامه ای	پیشرفت واقعی	پیشرفت برنامه ای	پیشرفت واقعی	پیشرفت برنامه ای	پیشرفت واقعی
پروژه فولاد خراسان		35%	28%	45%	38%	55%	48%	68%	61%	86%	79%
پروژه فولاد بردسیر		23%	16%	47%	40%	53%	46%	70%	63%	92%	85%
پروژه فولاد شاهرود		45%	38%	56%	49%	75%	68%	83%	76%	90%	83%
پروژه فولاد اصفهان		16%	9%	36%	29%	59%	52%	80%	73%	93%	86%
پروژه فولاد سیرجان		41%	34%	50%	43%	67%	60%	80%	73%	87%	80%
پروژه فولاد خوزستان		63%	56%	72%	65%	82%	75%	90%	83%	94%	87%



Scenario No4:



TimeSheet csv - Notepad

File Edit Format View Help

```
CalendarYear;Man month;Office
2012;XYZ Cons ltd 13;
2012;Sterling Co 12;middle east
2012;LeChase Serv 12;central asia
2013;XYZ Cons ltd 30;
2013;Sterling Co 15;middle east
2013;LeChase Serv 15;central asia
2014;XYZ Cons ltd 18;
2014;Sterling Co 16;middle east
2014;LeChase Serv 16;central asia
2015;XYZ Cons ltd 21;
2015;Sterling Co 17;middle east
2015;LeChase Serv 17*;central asia
2011;XYZ Cons ltd 13;
2011;Sterling Co 24;middle east
2011;LeChase Serv 5;central asia
*To be confirmed;;
```

Project Management Scenarios



Scenario No5:

TimeSheet csv - Notepad

File Edit Format View Help

CalendarYear;Man month;Office

2012;XYZ Cons ltd 13;

2012;Sterling Co 12;middle east

2012;LeChase Serv 12;central asia

2013;XYZ Cons ltd 30;

2013;Sterling Co 15;middle east

2013;LeChase Serv 15;central asia

2014;XYZ Cons ltd 18;

2014;Sterling Co 16;middle east

2014;LeChase Serv 16;central asia

2015;XYZ Cons ltd 21;

2015;Sterling Co 17;middle east

2015;LeChase Serv 17*;central asia

2011;XYZ Cons ltd 13;

2011;Sterling Co 24;middle east

2011;LeChase Serv 5;central asia

*To be confirmed;;

	2016											
Row Labels	1	2	3	4	5	6	7	8	9	10	11	12
XYZ Construction Ltd	450	375	450	500	450	425	500	350	450	475	375	400
Sterling Construction Co (Middle East)	350	350	350	350	350	350	400	325	375	325	250	350
LeChase Construction Services (Central Asia)	325	325	325	400	375	325	375	325	325	350	350	350
Grand Total	1125	1050	1125	1250	1175	1100	1275	1000	1150	1150	975	1100

