

How to architect a self-service strategy to power business intelligence at scale

ATSCALE

Today's Speaker Panel



Chad Wahlquist

Director of Data Strategy and Technology

Chad has 13 years of experience in building large-scale enterprise systems

Chad leads teams focused on building modern analytics platforms to enable Tyson Foods in their transition to a data driven company.

Chad has a background in emerging technologies from Blockchain to AI/ML and core analytics across the enterprise



@TysonFoods



Arun Ulag

Corporate VP, BI Platform

As the Corporate Vice President of the Business Intelligence Platform at Microsoft, Arun leads all engineering and product management for Microsoft's BI product portfolio. This includes Power BI, Azure Analysis Services, SQL Server Analysis Services, and SQL Server Reporting Services.

Previously, as General Manager, Arun ran Microsoft's APAC Cloud & Enterprise Division.



@arunulag



Andrew Brust

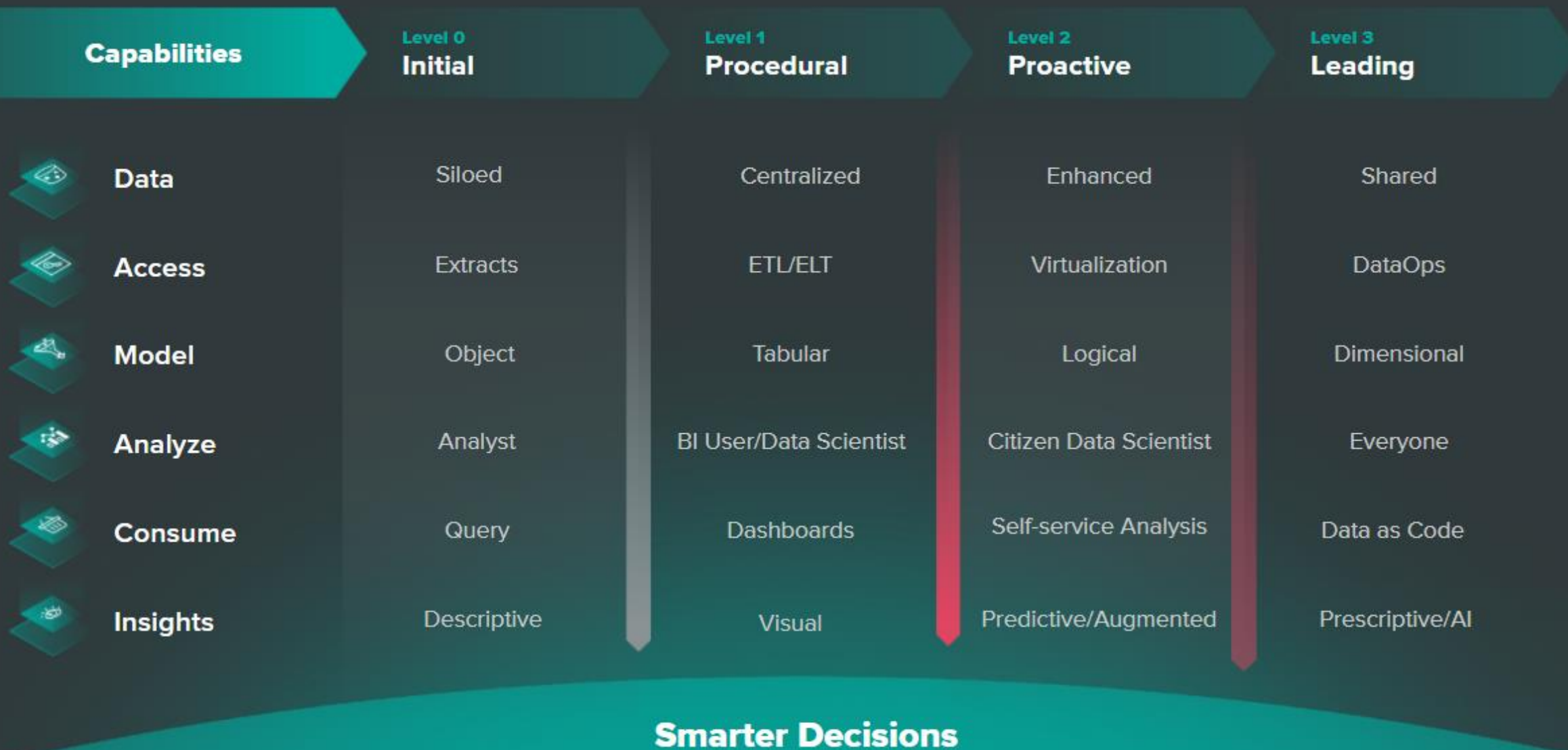
Research Director, Analytics, GigaOm & Microsoft MVP

Andrew has held developer, CTO, analyst, research director and market strategist positions at a number of organizations. He has worked with small, medium and Fortune 1000 clients in numerous industries and with software companies ranging from small ISVs to large clients like Microsoft. Andrew's resulting understanding of technology, and the way customers use it, makes his market and product analyses relevant, credible and empathetic.



@andrewbrust

Data & Analytics Maturity Model



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Data@Tyson - Why?



No Ops: OnPrem → IaaS → PaaS → Serverless



Service/Solution Elasticity (Unbounded Scale)



Advanced Analytics – ML / Predictive / Prescriptive



Big Data \$ Models – Separation of Storage and Compute



Cloud Native



Public/Syndicated Data

Building Blocks



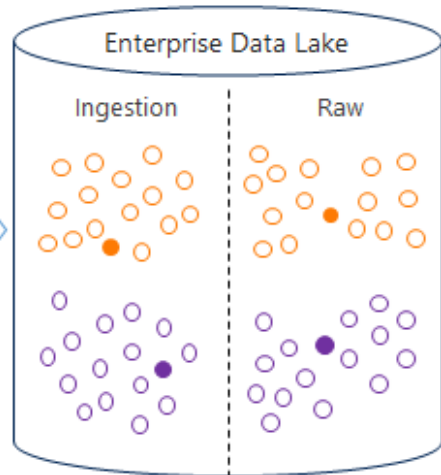
Source Data

Ingest data from various Tyson source systems like S4 and Workday, and external sources like Walmart or Nielsen Retail



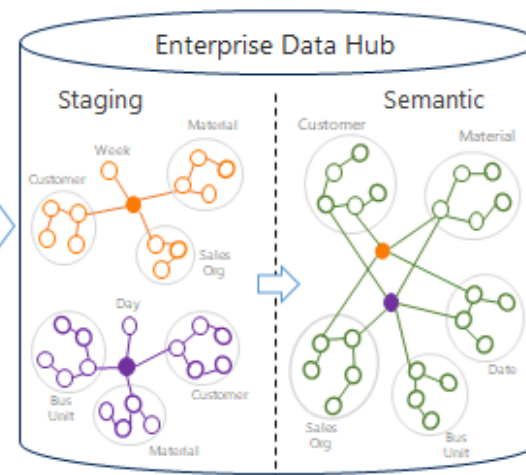
Data Lake

Raw data tables, production data, refreshed per schedule to meet business latency requirements



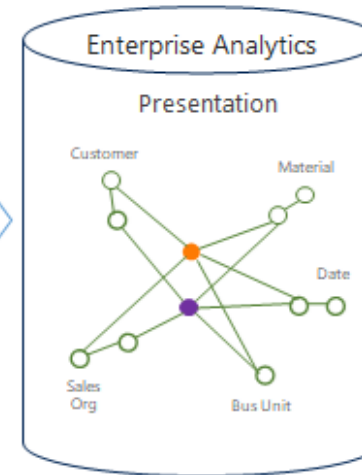
Data Hub

Data is modeled into it's subject area to enable scale and efficiency. Master data is reviewed and certified to ensure scalability / low maintenance



Analytics

Data views are built from the modeled data tables to create business friendly data views



Consumption

How our users interact with the data for analysis and reporting

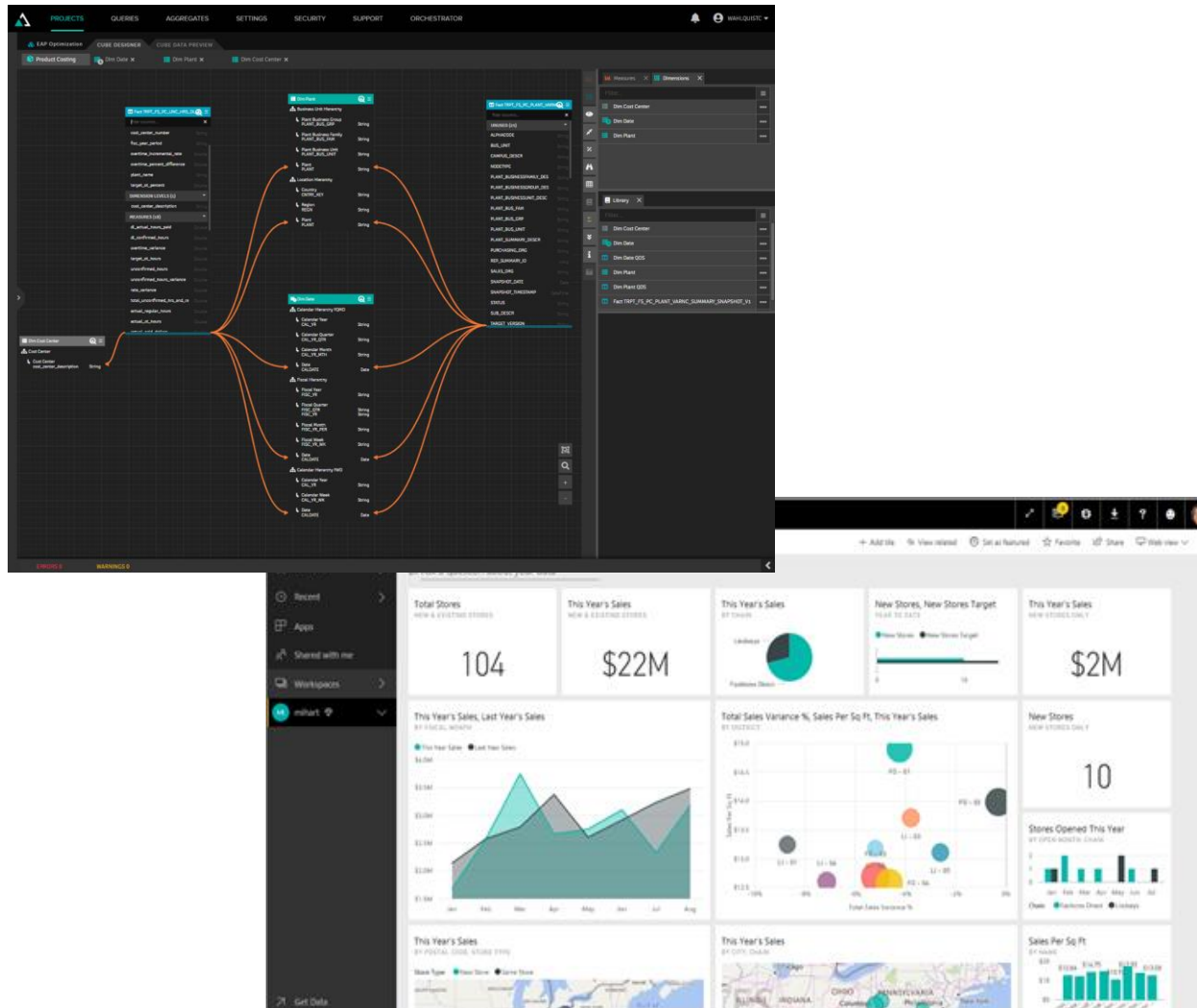


Scalable Self Service Principles



- Self Service with **guard rails**
- Certified copy of the data **model**
- Quick** Iterations to respond to business needs using **virtual** cubes
- Build for the **data** (via the model) not the report
- Solve for the **95%**

How We are Building



- Reusable building blocks give you starting point to quickly adapt to change
- Hyperscale and Virtual cubes allow you to test new ideas in minutes and hours not days and weeks
- Single version of the truth is the backbone of Digital Transformation
- Shift from “Just the Numbers” to Insights that drive outcomes

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Power BI

Drive a data culture

everyone | every decision | at any scale





6th YEAR

of triple digit growth

260K+

Organizations

Gartner®

February 2021

A Leader in Analytics & BI Platforms*

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2021 Gartner Magic Quadrant for Analytics and Business Intelligence Platforms, Analyst(s): James Richardson, Kurt Schlegel, Rita Sallam, Austin Kronz, Julian Sun

Figure 1: Magic Quadrant for Analytics and Business Intelligence Platforms



Source: Gartner (February 2021)

Power BI journey

Business
Analysts

IT

Information
Workers

2015–2016

Cloud BI

Economic
Disruption

2017–2018

Self-service BI
& Enterprise BI
converged

Full Stack Analytics

2019

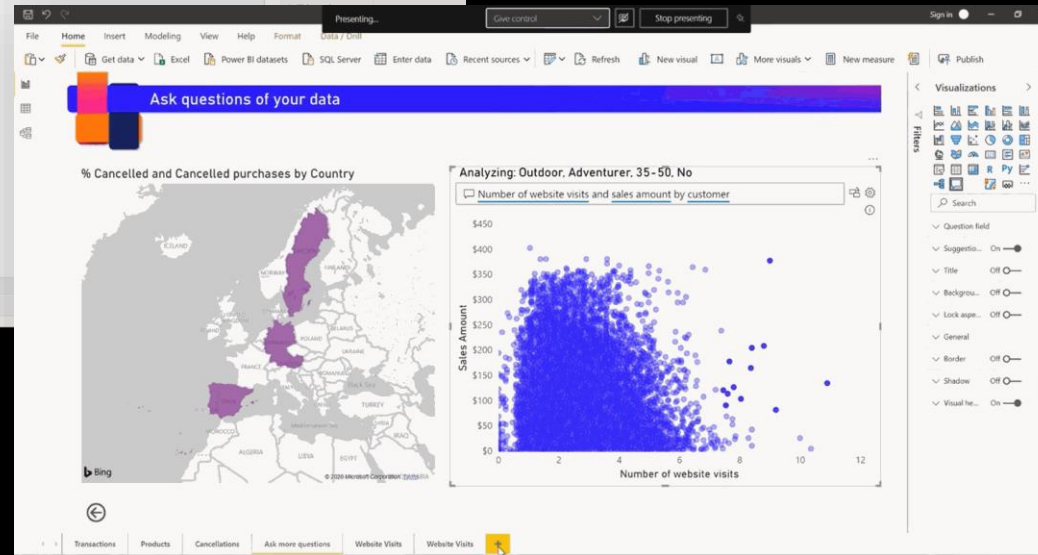
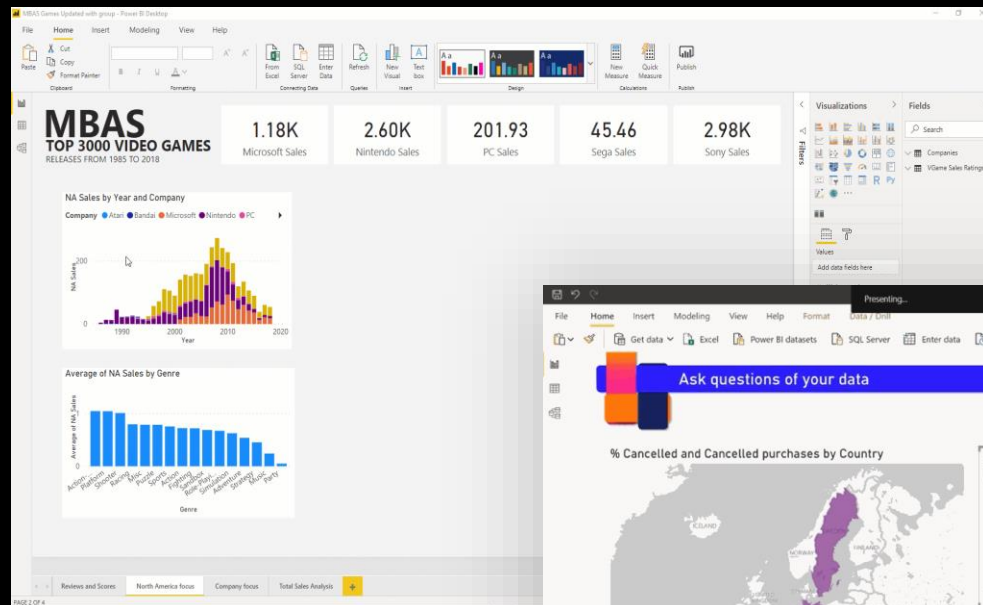
Augmented
& Automated
Analytics

2020

BI infused
into the
org fabric

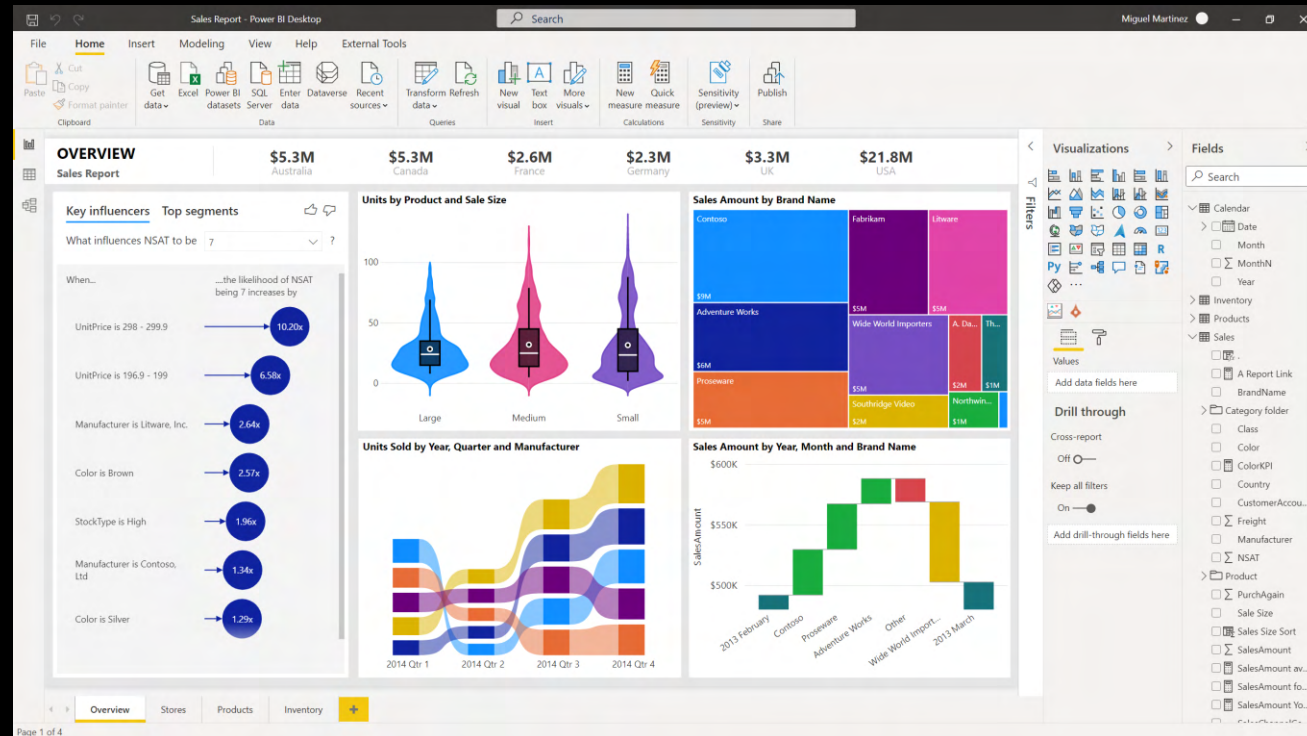
PowerPoint for Data

Instantly familiar Office experiences



Power BI Desktop

3M+ Power BI developers





50+

Datacenters
Worldwide

43

Languages

National Clouds

US Government,
China & Germany

Cloud = Economies of scale = Economic Disruption

2015

Power BI Desktop
Free

Power BI Pro
\$10/user

2016

Power BI Office E5
Included

2017

Premium Capacity
\$5,000/P1

2021

Premium Per User
\$20/user

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2021

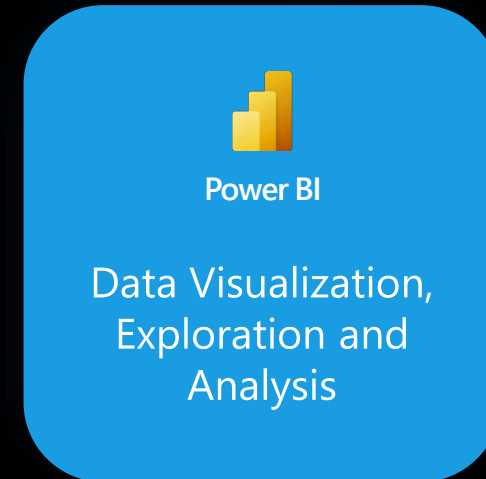
Performanc
Managemen

Enterprise & Self-Service Converged

Enterprise BI



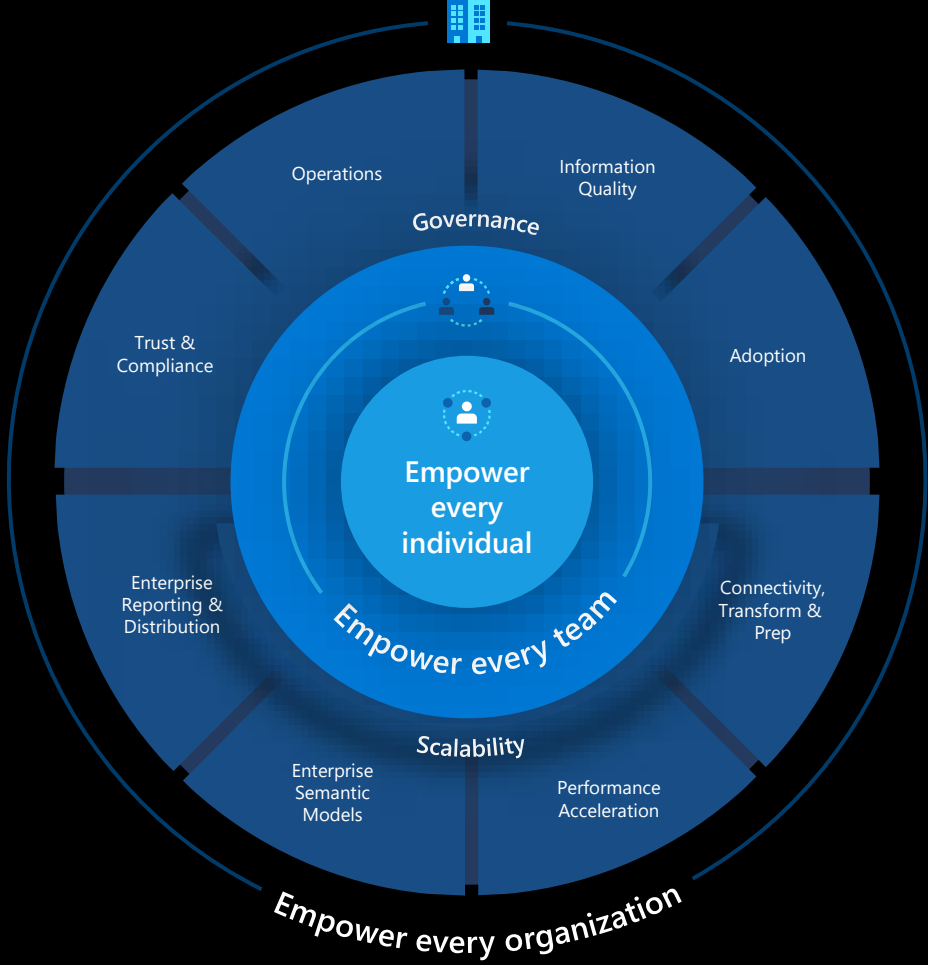
Self-Service BI



Enterprise & Self-Service Converged

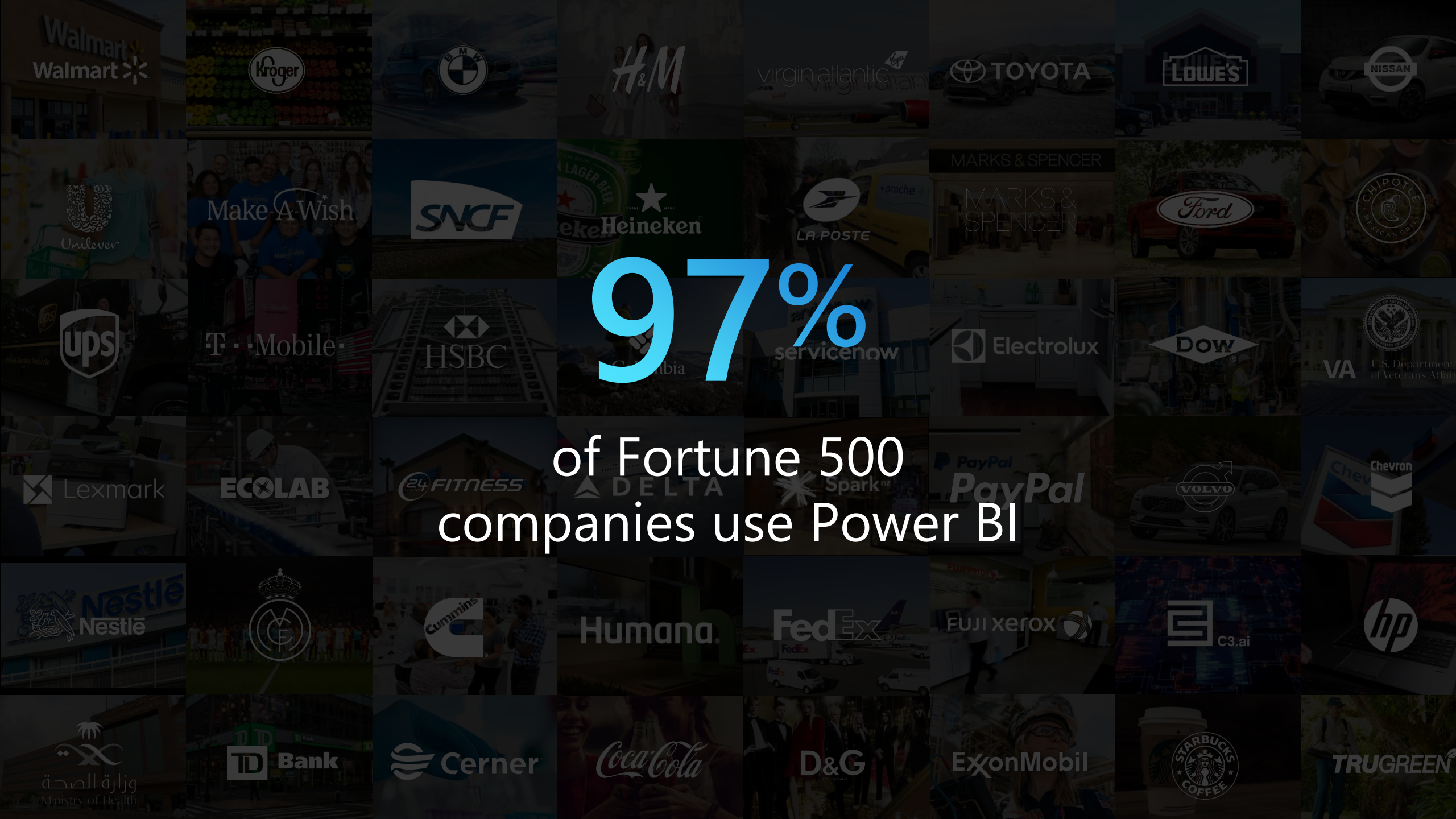


Enterprise & Self-Service Converged



97%

of Fortune 500
companies use Power BI



The world's
largest organizations are
standardizing on **Power BI**

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2021

Performance Management

2022

Real-time Analytics

2023

Frontline Workers

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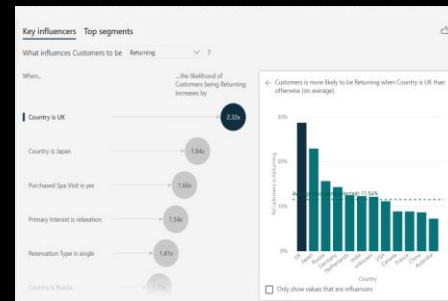
2023

Frontline Workers

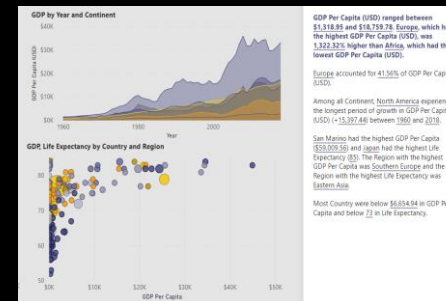
The Most Complete AI Capabilities in a BI Product



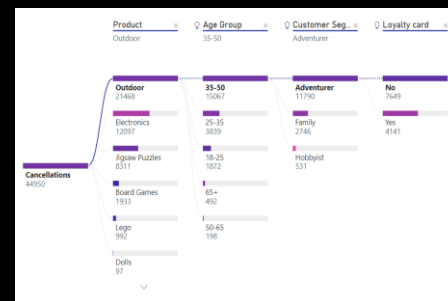
Key Driver Analysis



Smart Narratives



Root Cause Analysis



Q&A



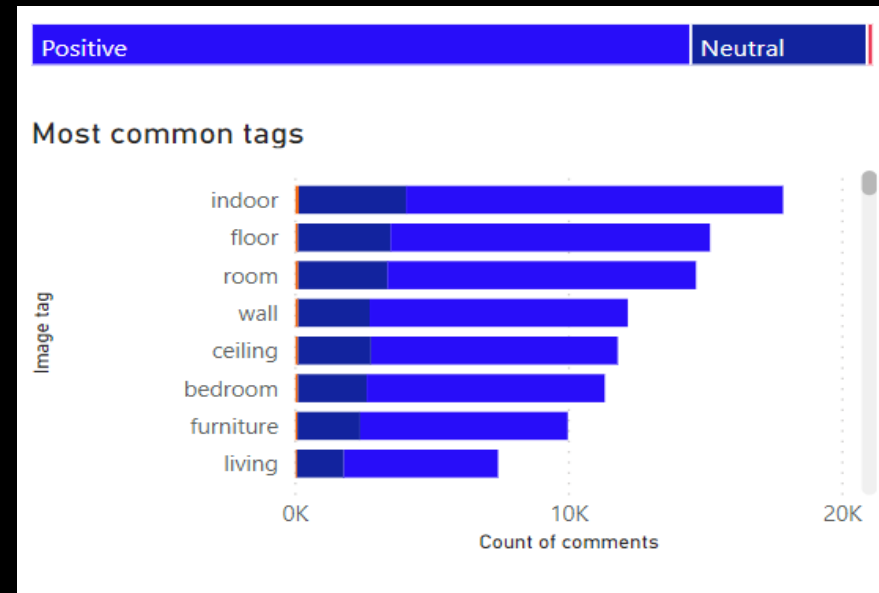
The Most Complete AI Capabilities in a BI Product



Sentiment Analysis

Sentiment Score	Title
0.75	Great room. Loved the pool and view.
1.00	disappointing
0.79	will be returning to Grand Kailua again!
0.94	Nice Condo, excellent location in Kona, HI
0.03	Outdated, dirty unit in good location.
0.06	Filthiest place I have ever stayed
0.94	condition of room--VERY DISAPPOINTING !!!
0.71	Nice hotel that is walking distance to everything
0.99	Reasonable beach condo - well located
0.88	Great Location for ocean sunset views
0.97	Nice hotel on the beach
0.78	best location in kailua kona.
0.98	SCAM! DO NOT STAY HERE!
0.80	Nice hotel close to the beach. Spacious livingroom
0.12	Avoid at all cost
0.93	Great location and condo building

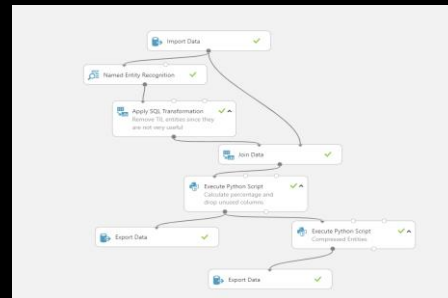
Key Phrase Extraction



The Most Complete AI Capabilities in a BI Product



Extend with Azure ML



Create ML models

Choose a model | Select data to study

Classification

- Binary Prediction**
Predict whether or not an outcome will be achieved.
- General Classification**
Distinguish between three or more outcomes.

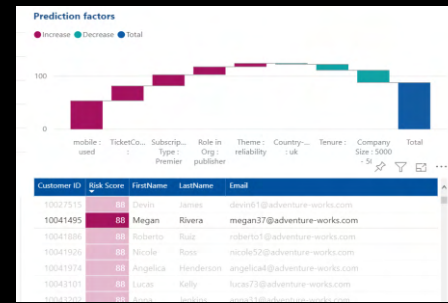
Regression

- Regression**
Estimate a numeric value.

Python & R Integration



Explore Predictions



Strong adoption for AI

100,000+

Companies using
AI capabilities

20+

AI customer
success
stories



Power BI journey

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Power BI + Teams

Your data is where you collaborate

As fundamental as "chat", "calendar" and "files"

Microsoft Teams

Power BI Home Datasets Create Learn About

Good evening, Patrick

Find and share actionable insights to make data-driven decisions

+ New report

Favorites + frequents

- Account Renewal Pipeline (Report)
- Store Inspections (Report)
- Team Insights (Report)
- My workspace (Workspace)
- Sport by Degree of Difficulty (Report)
- Workforce Planning (App)
- Trial Product Performance (Report)
- Analyze Popular Stocks with Power (App)

Featured

- Patrick Baumgartner featured this app 2 months ago: Store Inventory Tracker (Track Store Inventory)
- Patrick Baumgartner featured this report 2 months ago: Sales Pipeline
- Kim Manis featured this report 2 months ago: Customer Preference Market Research
- Kim Manis featured this report 2 months ago: New Product Sample Market Perform...
- Patrick Baumgartner featured this report 2 months ago: Trial Product Performance

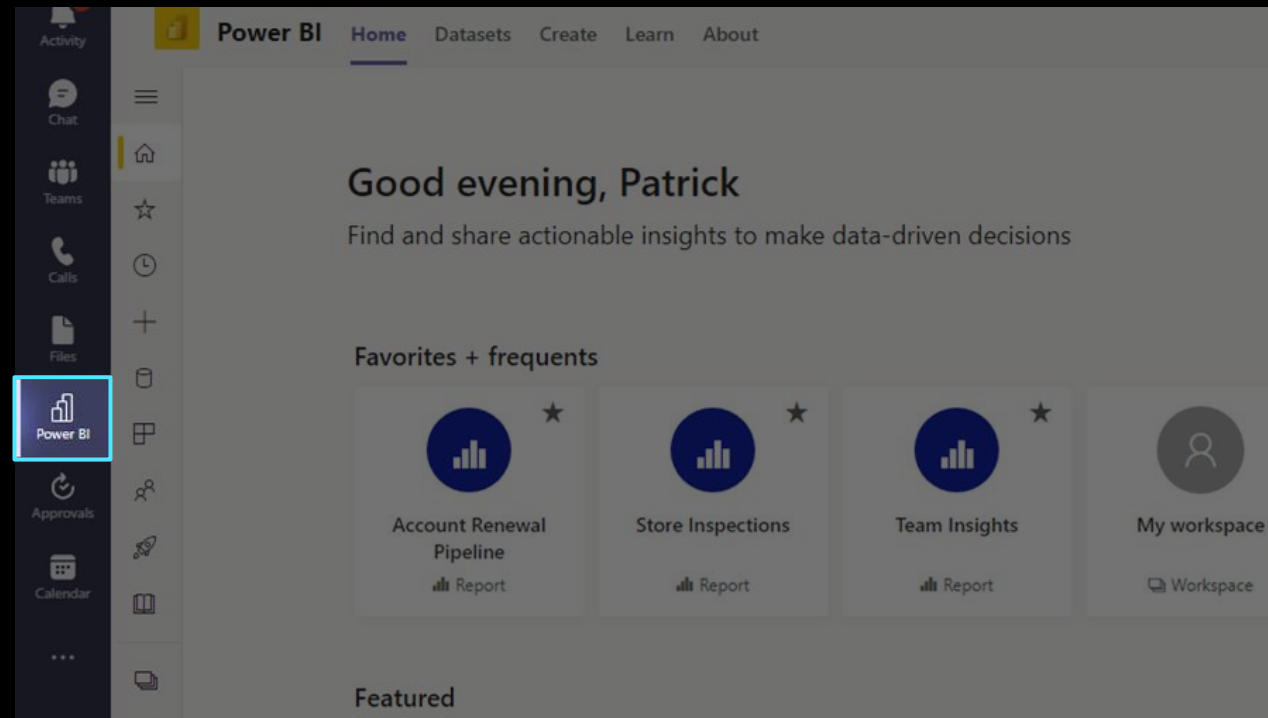
Recents Shared with me My apps

Name	Type	Opened	Location	Endorsement	Sensitivity
Workforce Planning	App	10 hours ago	Apps	—	—

Power BI + Teams

Your data is where you collaborate

As fundamental as "chat", "calendar" and "files"



Power BI + Excel

Power BI Datasets in Excel

The image displays two overlapping windows. The top window is Microsoft Excel, showing a data table with columns for months (May to Dec) and various revenue categories. The bottom window is the Power BI Desktop interface, displaying a dashboard titled 'Workforce Preference Survey Analysis'. The dashboard includes two bar charts: 'Millennials want to return to the Office' and 'Managers prefer to stay remote'. Below the charts is a data table showing the number of employees across different functional areas and return preferences.

Generation	Return to Office	Remote
Generation X	41.94%	28.71%
Generation Y	29.34%	18.98%
Millennials	42.30%	17.89%

Position Type	Return to Office	Remote
Employee	31.11%	35.21%
Manager	48.11%	30.70%

Row Labels	20	25	30	35	40	45	50	55	60	65
ICT Service	1.19%	4.20%	8.20%	14.70%	22.10%	28.70%	34.20%	3.88%	3.22%	0.00%
Remote	0.00%	0.00%	11.70%	11.70%	11.70%	11.70%	11.70%	11.70%	11.70%	11.70%
Return to Office	1.19%	4.20%	8.20%	14.70%	22.10%	28.70%	34.20%	3.88%	3.22%	0.00%
Hybrid	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Return to Office	10.53%	10.53%	10.53%	10.53%	10.53%	10.53%	10.53%	10.53%	10.53%	10.53%
Hybrid	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Remote	3.33%	3.33%	3.33%	3.33%	3.33%	3.33%	3.33%	3.33%	3.33%	3.33%
Return to Office	4.88%	4.88%	4.88%	4.88%	4.88%	4.88%	4.88%	4.88%	4.88%	4.88%
Energy Systems	1.23%	4.20%	8.20%	14.70%	22.10%	28.70%	34.20%	3.88%	3.22%	0.00%

Excel integrated into Power BI

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2022

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2022

2023

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Management

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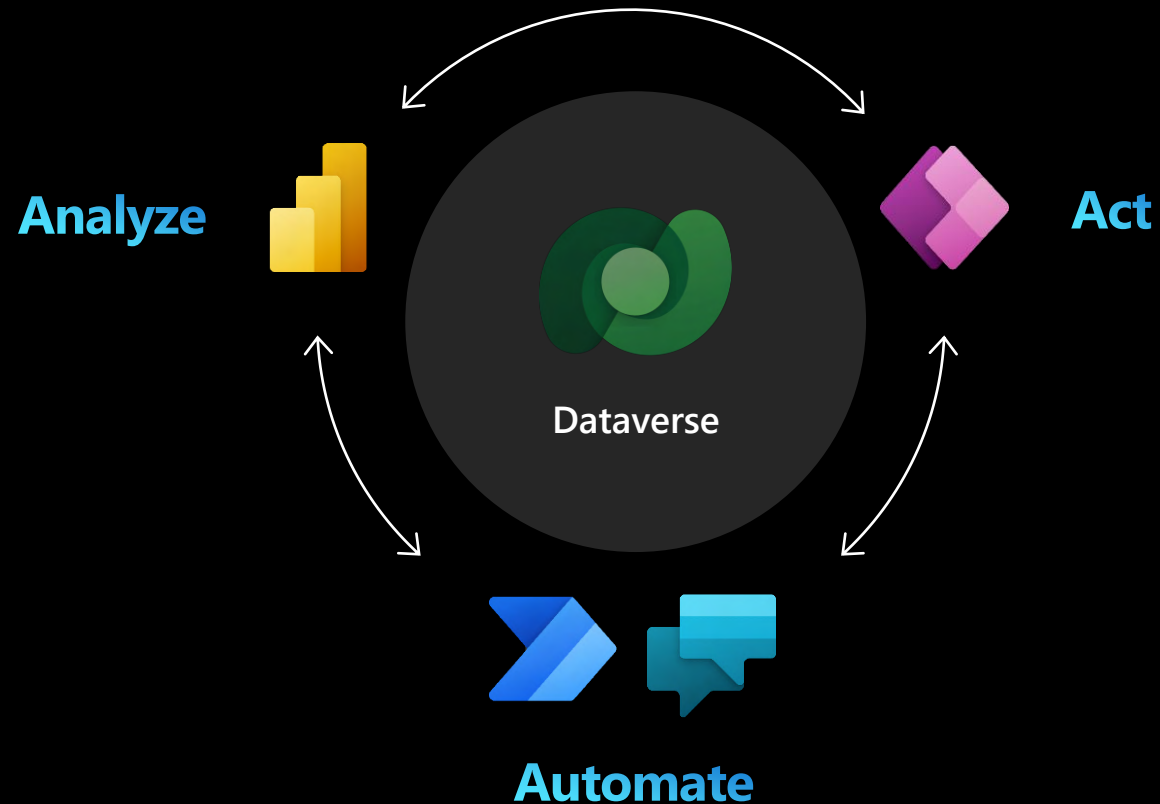
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From insight to action through the Power Platform



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NEW

Goals in Power BI

Northwind FY21 Goals | Confidential/Microsoft ...

Share Chat in Teams Edit

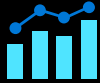
Northwind FY21 Goals
We as a company strive for empowering businesses to do more

12 Goals 6 On track 3 At risk 1 Behind 1 Not started 0 Overdue 1 Completed

Name	Owner	Status	Value	Progress	Due date	Notes
Grow revenue for Northwind to \$6M	Dan Doan	On track	\$5M / \$6M		Jun 1, 2021	📧
Grow Northwind Standard to \$2.5M	Simon Richert	On track	\$5.5M / \$2.5M + 31% WoW		May 31, 2021	📧
Grow Northwind Enterprise to \$2M	Otar Bichiashvili	At risk	\$545K / \$2M		Jun 1, 2021	📧
Grow Northwind Premium to \$1.5M	Justyna Lucznik	On track	\$1.70M / \$1.50M + 6% WoW		May 31, 2021	📧
Widespread adoption through total MAU of 1M	Nikhil Gaekwad	On track	870K / 1M + 1% DoD		May 31, 2021	📧
250K MAU for Northwind Enterprise	Bogdan Crivat	Completed	270K / 250K + 52% DoD		May 31, 2021	📧
400K MAU for Northwind Premium	Priya Sathy	On track	380K / 400K + 12% WoW		May 31, 2021	📧
350K MAU for Northwind Standard	Sarina Stevens	Behind	220K / 350K + 7% WoW		May 31, 2021	📧
Grow Customer Satisfaction through increasing NPS to 4.5	Pratik Talwar	At risk	3.70 / 4.50		Jun 1, 2021	📧

NEW

Goals in Power BI



Driven by data



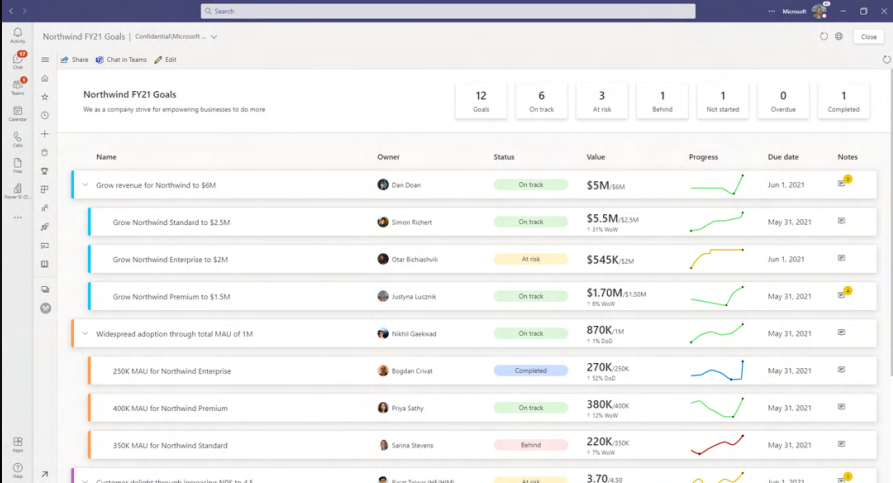
Built for teams



AI powered



Automated action



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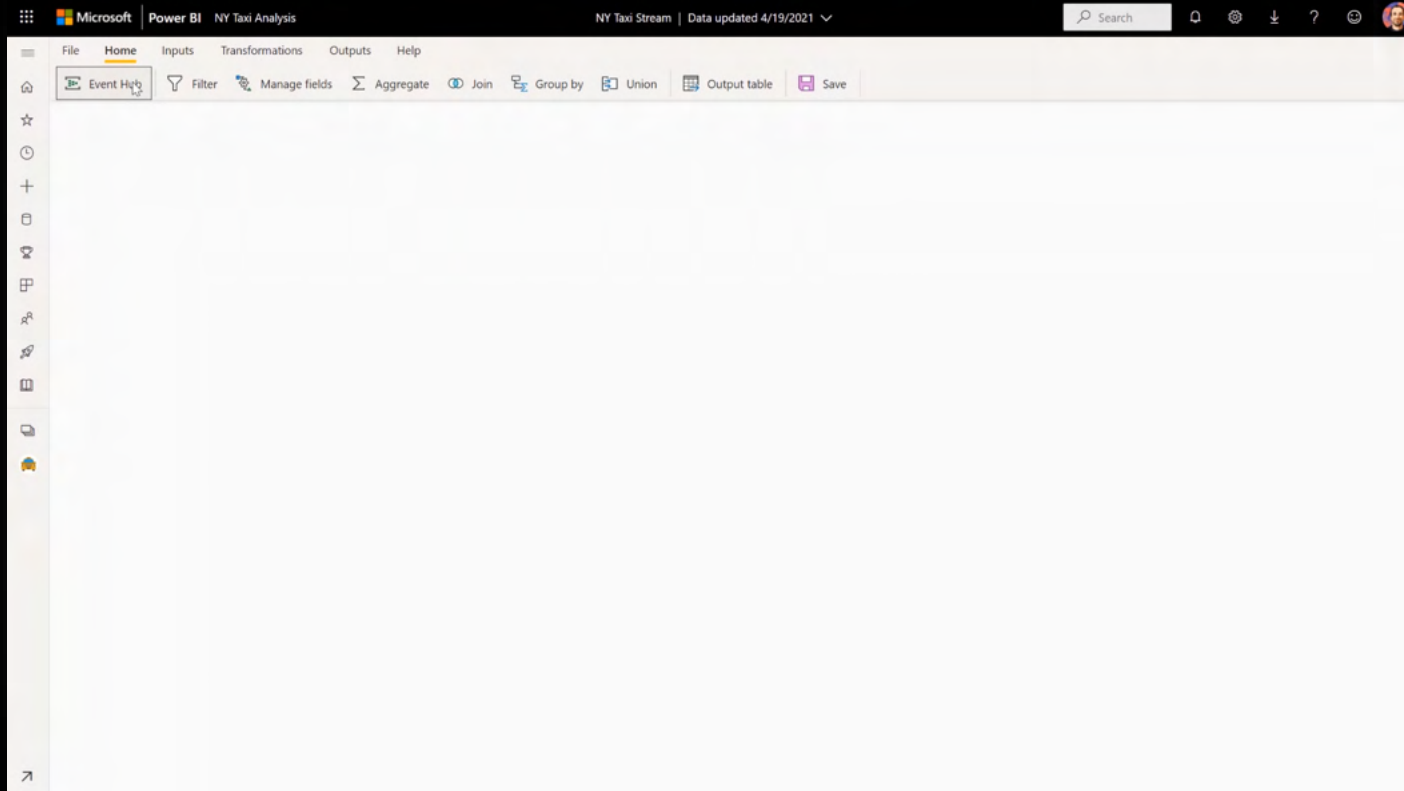
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LATER THIS YEAR

Power BI Streaming Dataflows



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#1 in Mobile



4.7 Apple™ App Store

4.8 Google™ Play

50X > reviews than all others combined

Power BI in the real world

HoloLens 2



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Self-Service Analytics

This has gone from being a trend to being table stakes

Self-service is the key to wide adoption; no data-driven culture without it

Advanced features need to be there too

These enable building of consumable assets by experts

Power BI and AtScale both accommodate this, by letting experts build semantic models



Data Literacy

- There are two elements to this: competency and evangelism/outreach
- Competency: everyone needs to be comfortable opening up data sets, doing some basic prep on them and visualizing them. Any intimidation factor here will be a blocker
- Evangelism/outreach: it's important to make data as discoverable and its analysis as enticing as possible.
- This requires education, internal marketing, incentives.
- It also requires data stewardship, curation and governance behind the scenes, to keep things safe and clean.



'Data as Code'



Data needs to be managed *operationally*, just as code has come to be



Version control, continuous integration, deployment



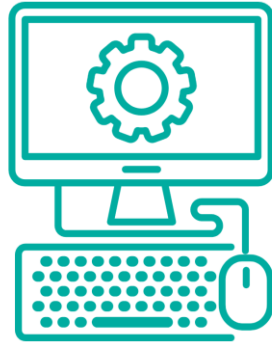
This also means changes in data must propagate to analytical models



Which means ROLAP/direct connect is often the way to go



'DataOps'



There may be art involved in data work, but operational side is engineering



Ingest, transformation, and aggregation must kickoff in reliable workflows



This goes for machine learning (data sets, experiments, models) too



Gives us DataOps and MLOps



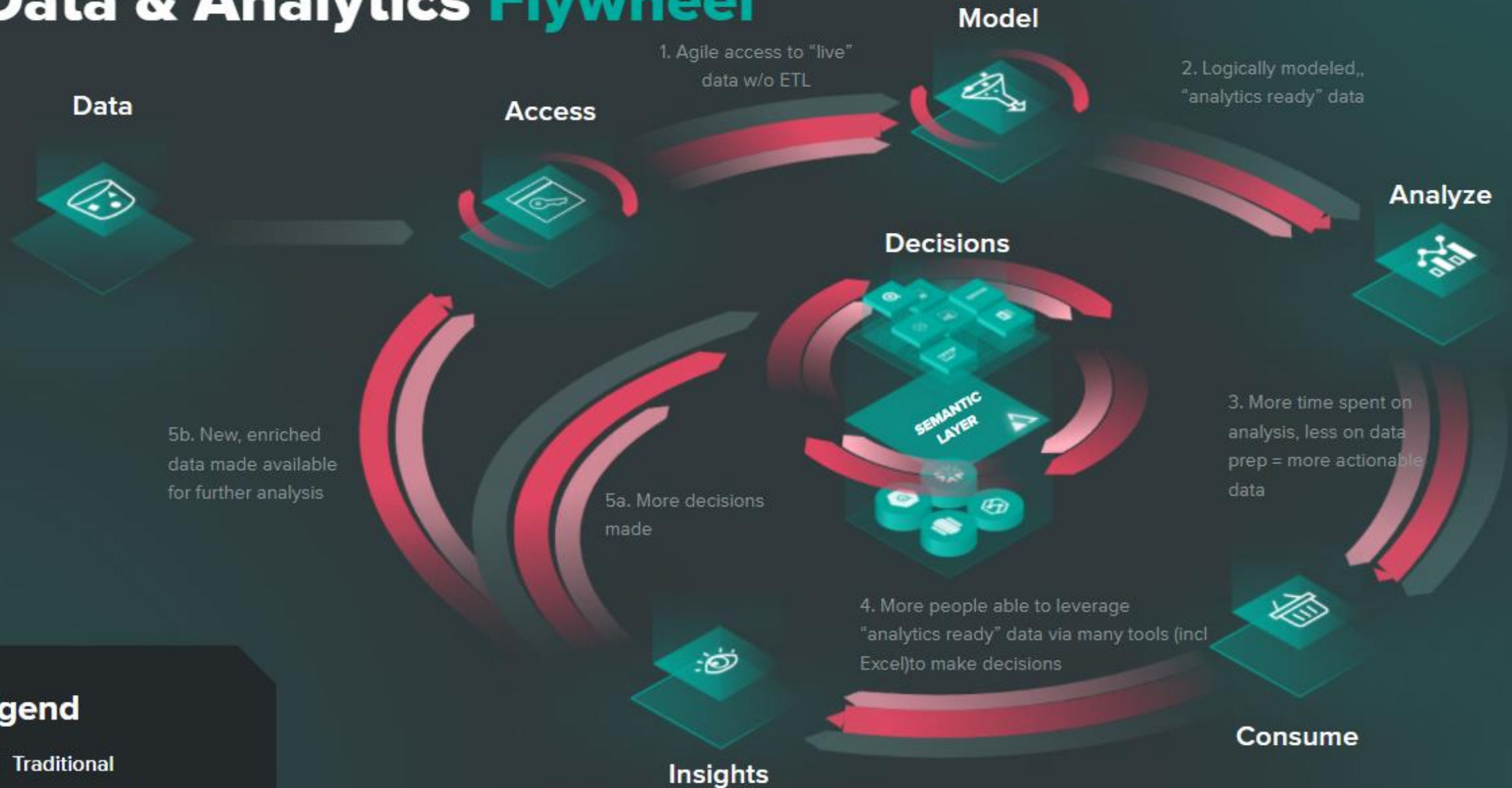
DataOps is critical to data stewardship and curation



It's the infrastructural support for self-service and data literacy/culture



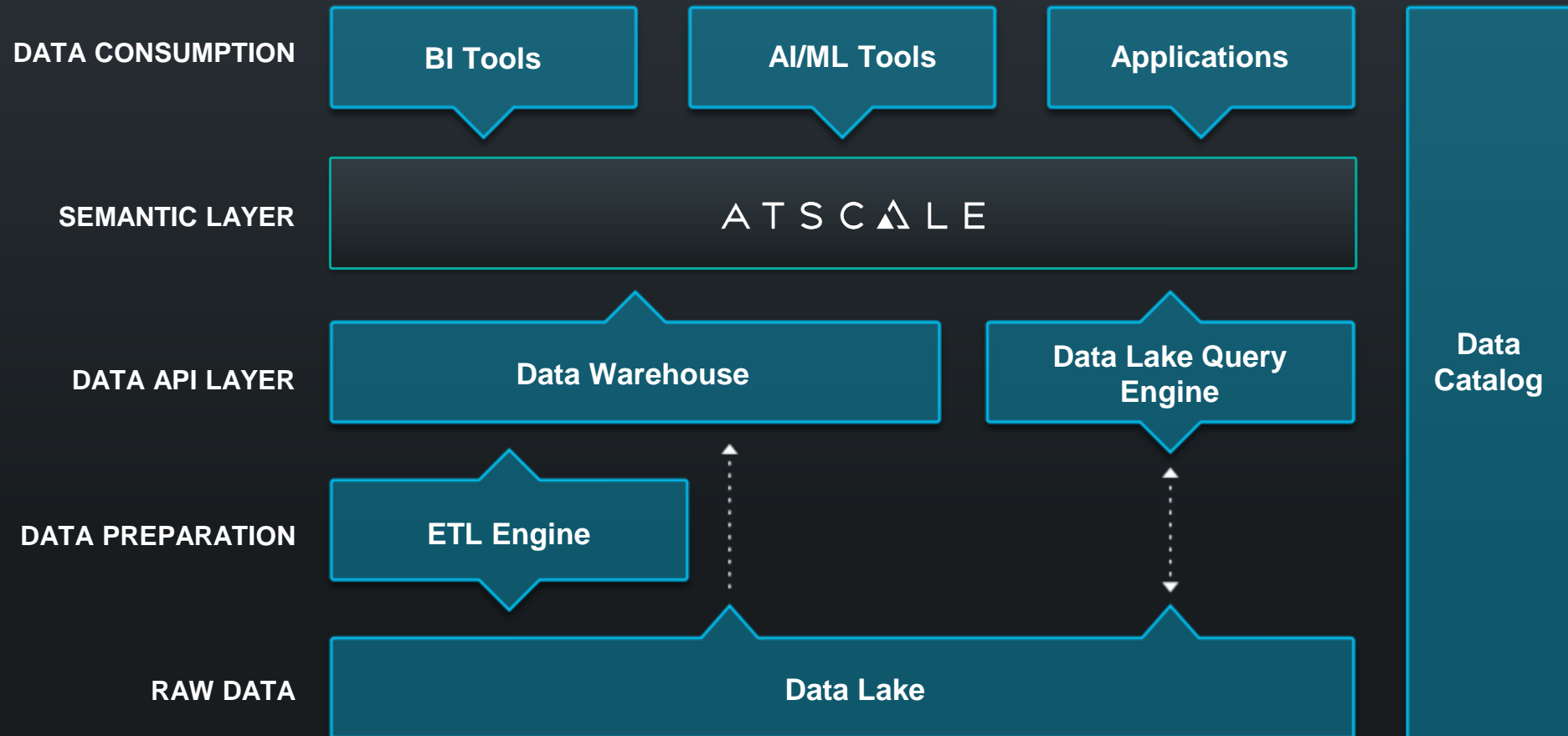
Data & Analytics Flywheel



Legend

- Traditional
- w/ Semantic Layer

AtScale: *Where we fit.*



Power BI + AtScale: “Live” Connection to Big Data in the Cloud



AtScale + Power BI: One Model, One Semantic Layer

The screenshot shows the AtScale CUBE CANVAS interface. The main workspace displays a data model for the 'Internet Sales Cube'. It features several dimensions: Color, Weight, Size, Style, Customer, Product, and Time. Each dimension is represented by a card with its attributes and relationships. The interface includes a top navigation bar with tabs for PROJECTS, QUERIES, AGGREGATES, SETTINGS, SECURITY, SUPPORT, and ORCHESTRATOR. A sidebar on the left shows the 'Internet Sales Cube' and a 'Preview' window for the selected dimension. A red box highlights the main workspace area.

The screenshot shows the Microsoft Power BI Desktop interface. The main workspace displays a data model diagram with various tables and their relationships. The interface includes a top navigation bar with tabs for File, Home, and Help. A sidebar on the right shows the 'Fields' pane with a search bar and a list of fields: CubeMeasures, Color Dimension, Customer Dimension, Gender Dimension, Geography Dimension, Measures, Order Date Dimension, Order Dimension, Product Dimension, Ship Date Dimension, Size Dimension, Style Dimension, and Weight. A red box highlights the main workspace area, and another red box highlights the 'Fields' pane.

The logo for ATSCALE is centered on a dark grey background. It features the word "ATSCALE" in a white, sans-serif font. The letter "A" is replaced by a teal-colored triangle pointing upwards. Behind the text, there is a large, faint, light grey geometric shape consisting of a central triangle pointing upwards, with two large circles on either side, all formed by a network of thin lines and small dots, resembling a molecular or network structure.

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