2025 DYNAMICS CON

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Getting Started with AI

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Columbus Global

#ItsAllAboutTheData #TheDataIsTheData

Columbus®

For more than **30 years** our digital advisors have connected customers and communities through business-critical applications. At Columbus, we are experts in the development, deployment, enhancement, and support of digital solutions essential to enterprise operations.

1,600+
Expert Digital Advisors

9,000+
Implementations

5,000+
Customers Globally

1.7M+
Consultancy Hours Annually

24/7/365
Support Desk & Managed Services

80,000+
Cases Solved Every Year

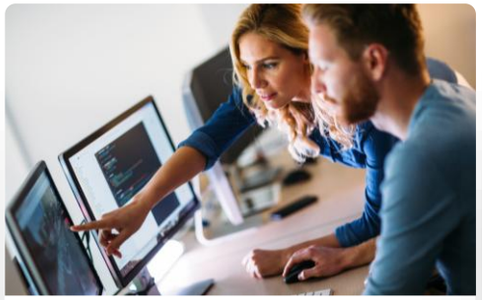
20+
Strategic Vendor Partnerships

45+
Countries with Columbus Clients

9
Languages for Support at Scale

Columbus Data & AI

Core Competencies



Data Estate

Scalable BI solutions

Modern Data Platform

Microsoft Analytics platforms

Dynamics BI Accelerator Templates

Fabric

Data & AI Strategy

BI Roadmap

Data Literacy

Extended use of BI Solution

Center of Excellence

Data Governance

Sustainability

ESG Reporting

ESG Data Accelerator

Artificial Intelligence

Insights of tomorrow

CoPilot

Data Visualization

Extended use of Power BI platform

Power BI

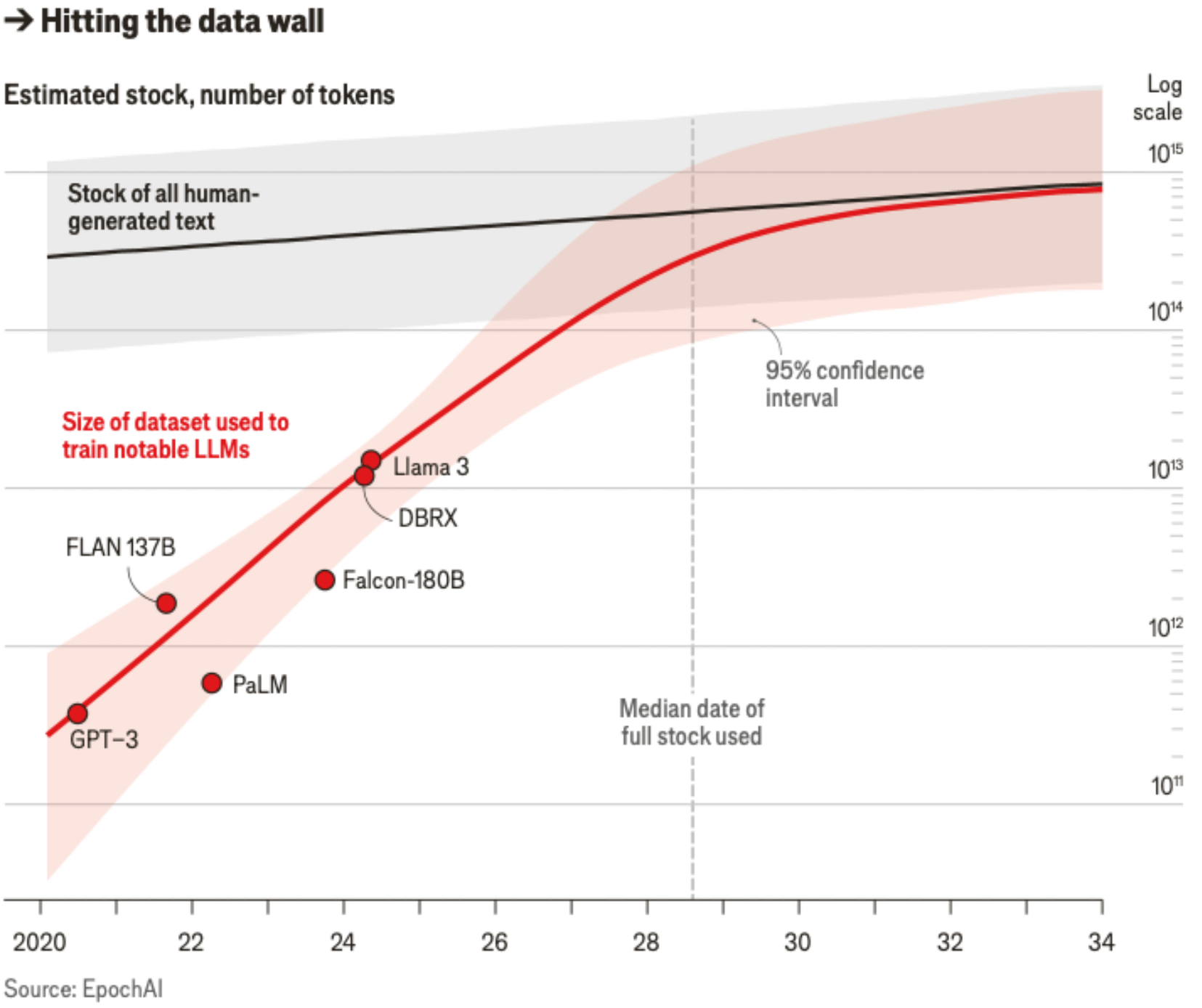
Fabric

Domain Expertise – Manufacturing/Retail/Food

A couple of Facts

Ready or not! 34 → 84

Running Out of Data



- Agenda

What is Advanced Analytics
Key Facts and Adoption
AIML Use Cases
AIML Scenarios
How to be Successful With AI
Make it Work – AIML Framework
AI With Fabric
Finish Up
Questions

What is Advanced Analytics?

Advanced Analytics

Traditional BI addresses the “what happened?” (Descriptive analytics)

Advanced Analytics AI/ML

“Why” (Diagnostic analytics)

“What will happen” (Predictive analytics)

“How we can address it” or "what should be done” (Prescriptive analytics)

Introduction to AI Terminology

Traditional AI

Resides in Data & Analytics department

e.g. Data Analysis, Data Strategy, Data Algorithms, Forecasting models

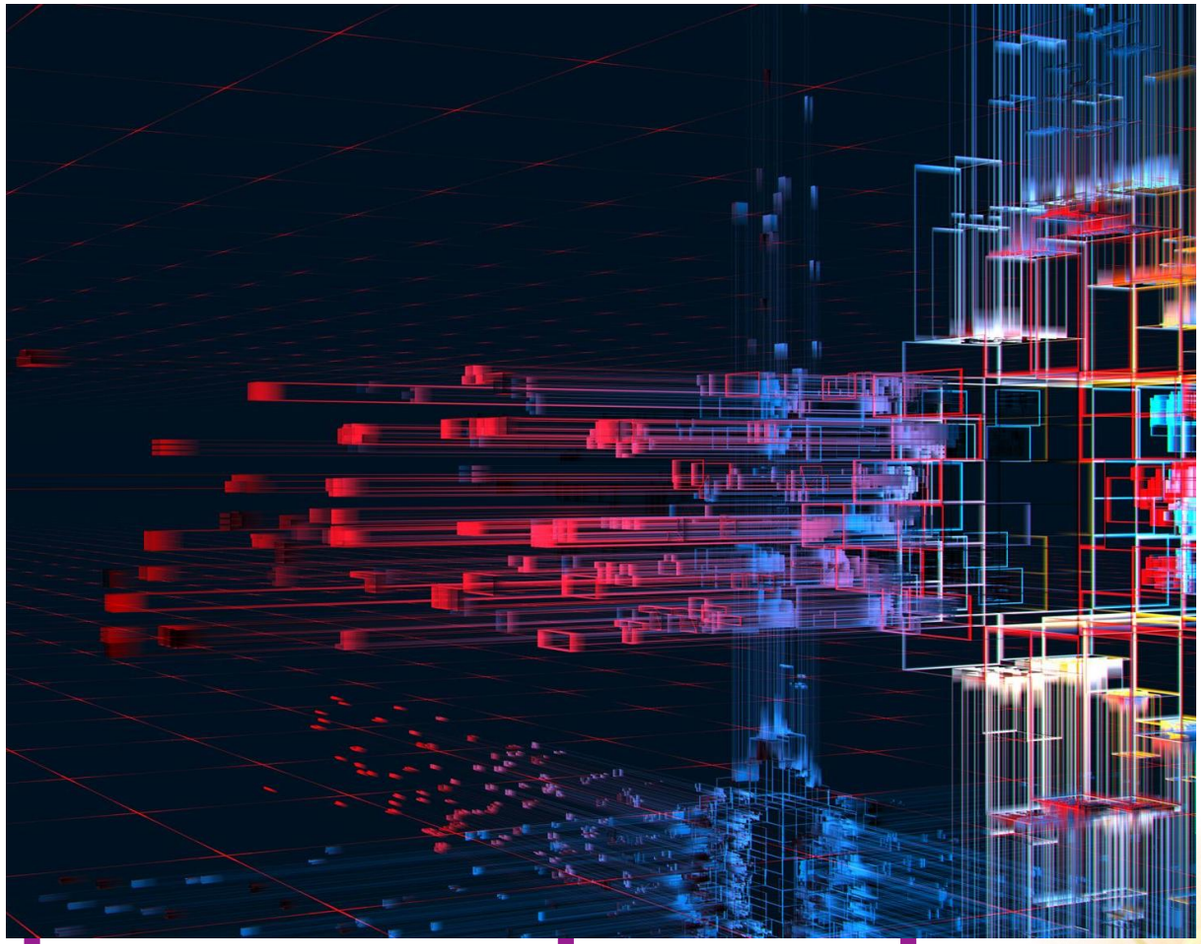
Generative AI

Resides in [everywhere]

Chatbots that can connect to other services. E.g Service chat bot (Copilot) that is finetuned on product data that can create a service task in D365 Field Service with a summary of the dialogue with the customer if the problem persists after chatting with the copilot.

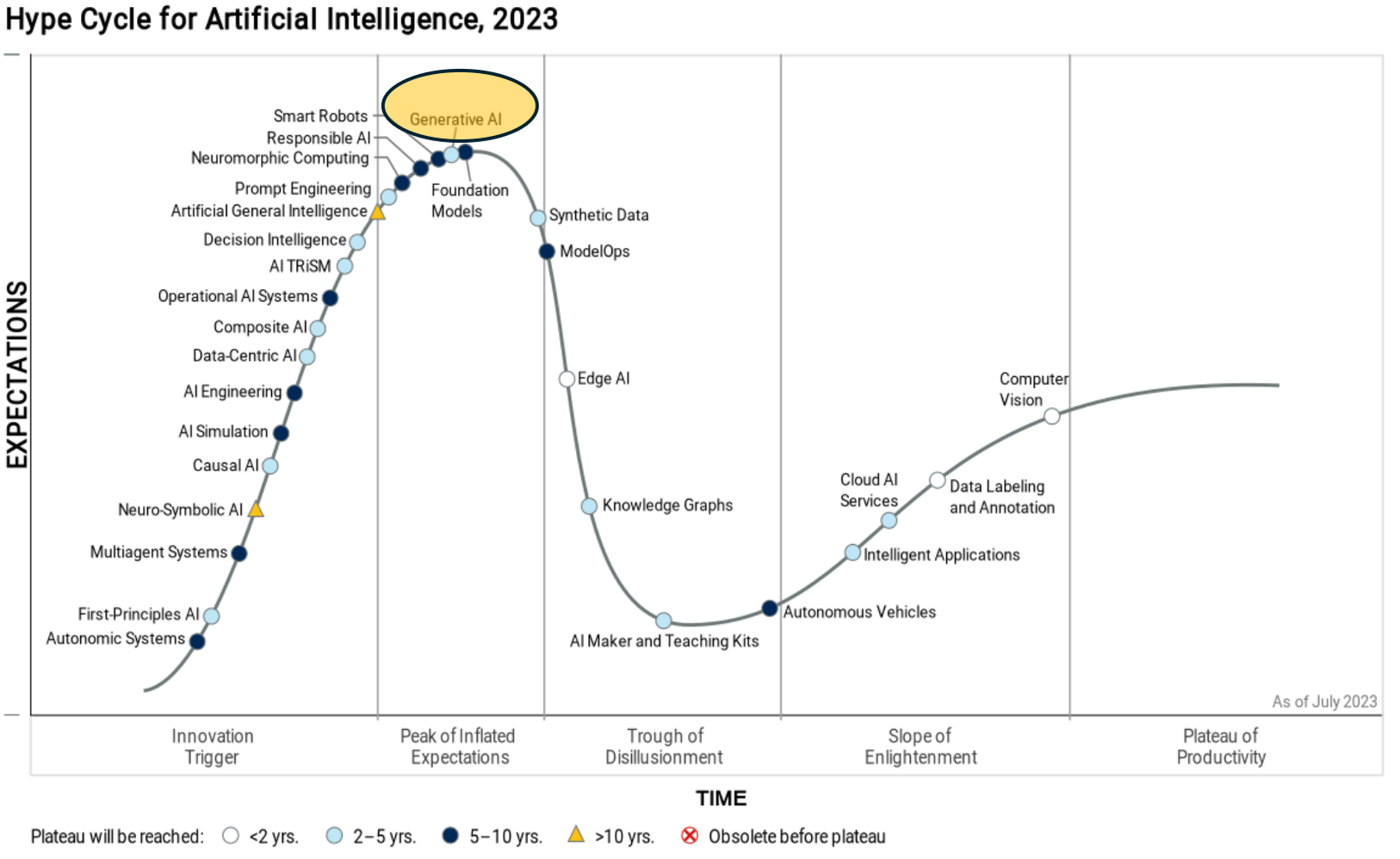
Important terminology Examples

- Large Language Models (LLMs)
- Foundational Models vs Finetuned Models
- Prompt Engineering
- Prompt Flow
- RAG (Retrieval Augmented Generation)



Technology readiness

The hype cycle



Gartner

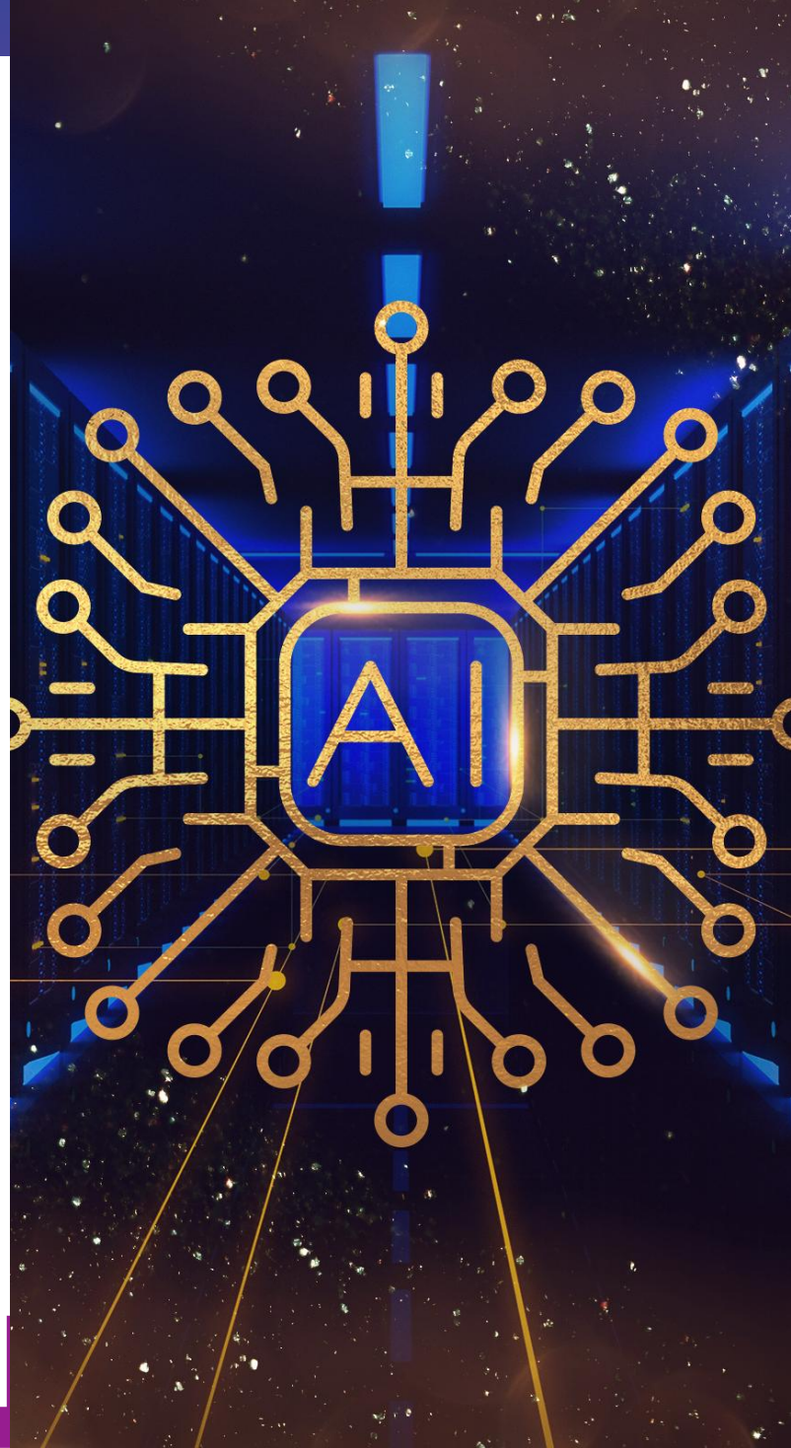
Artificial Intelligence

- Technology is advancing quickly in the modern world
- Much of this tech is from the field of Artificial intelligence
- AI refers to something that is "man-made" and "intelligent" refers to something that has "thinking power."

Stages of AI

Artificial Narrow Intelligence (ANI)	Artificial General Intelligence (AGI)	Artificial Super Intelligence (ASI)
ANI can only carry out a limited range of certain activities Some examples: • Siri • Alexa • Self-driving cars	AGI is the stage in the development of artificial intelligence at which robots will have the capacity to think	The level of AI at which computers will be more intelligent than people is known as artificial super intelligence

We are here!



Branches of AI

Artificial Intelligence (AI)
The broadest term

Human Intelligence exhibited by machines
Focal Areas of AI
- Reasoning
- Knowledge
- Planning (including navigation)
- Natural language processing
- Perception

Machine Learning (ML)
A subset of AI

Statistical techniques enable prediction by machine to improve with experience
Beyond deep learning it includes various approaches
- Random Forest create multitudes of decision trees to optimize a prediction
- Bayesian networks use a probabilistic approach to analyze variables
- Support vector machines be fed categorized examples and create a model to assign new inputs to one of the categories

Deep Learning (DL)
A subset of ML

- It models the brain and uses an artificial 'neural network' – a collection of neurons connected together
- It is useful because the algorithm undertakes the tasks of feature specification (defining of features to analyze from the data) or optimization (weighting the data to deliver an accurate prediction)

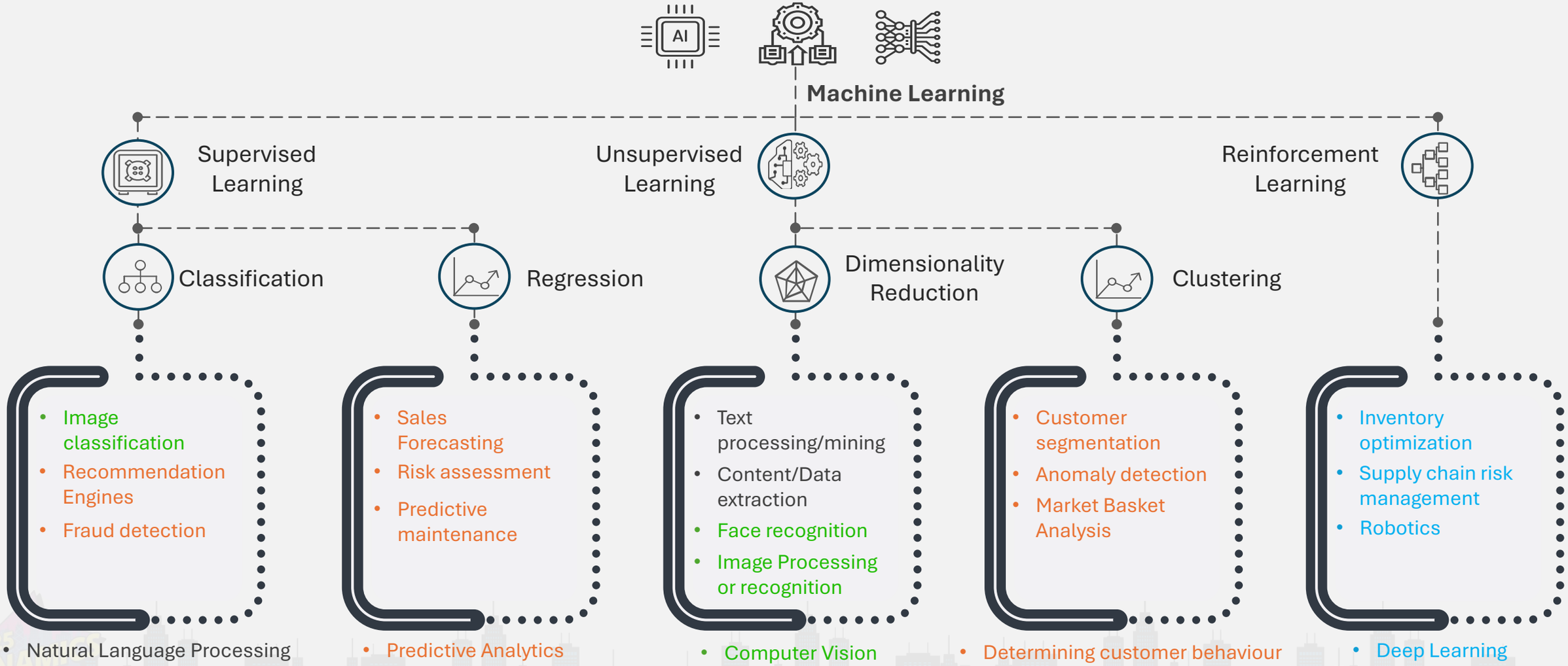
Generative AI
A subset of DL

- Generative AI refers to deep-learning models that can generate high-quality text, images, and other content based on the data they were trained on.

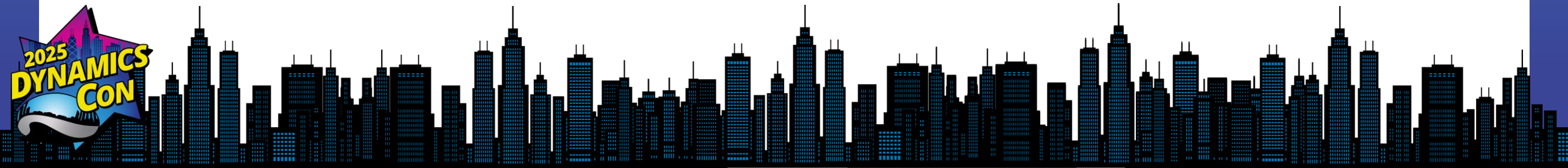
Factors driving the rapid advancement of AI :

- Faster and more powerful computation (GPUs)
- Development of new algorithms
- Tech giants opening resources to enable others to develop better AI (e.g., TensorFlow etc..)
- Greater data availability
- Availability of cloud-based infrastructure

Capability of Machine Learning



Key Facts & Adoption



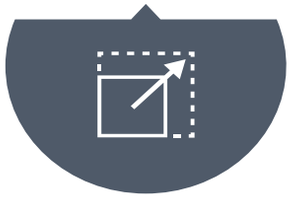
Adoption of Advanced Analytics (AI/ML)

35%
42%

12,000,000 jobs

$136.6B Global Market 38.0% CAGR

AI in the retail: $20.05 B by 2026

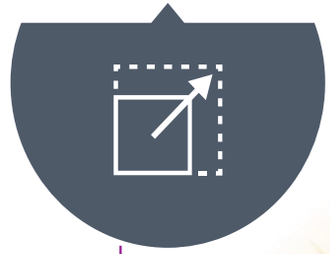


5X

91%

80%

2025



When to do what - Natural steps in the evolution

Persona driven consumption and interactions

- Easy to implement
- Low hanging fruit – good ROI
- End user satisfaction

Workflows & Processes

- Process investigation
- Business driven
- Different levels of complexity

Robot process automation

- Fulfil the 4 criteria for RPAs.
- Data and compe-tencies required
- Fast implementations

AI/ML

- Skills like data scientist needed
- Prepacked use cases available
- With relevant data in place fast implementations

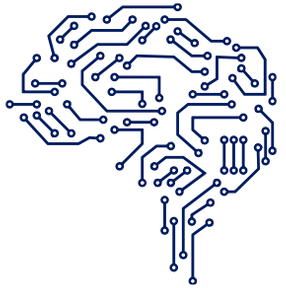
Enterprise automation

- The combination of number techniques like RPAs, ML, IoT and integrations

Process Intelligence

- Process insights to identify end-user interactions, process improve-ments and candidates for RPAs, ML and or Enterprise Automation

Strategy for AI Adoption



Define

- Understand the business objective
- Data Driven Approach
- Identify business priorities & strategy

Discover

- Build AI-ready culture
- Train and empower
- Get commitment from the organization

Identify

- Understand the principles of AI
- Consider the ethical and social responsibilities
- Build trust

Introduce

- Build awareness within your org
- Get educated on the technology

Scale

- Start small in the org
- Pilot projects with limited scale then build up and out
- Leverage pre-built tools

Enable

- AI is available to everyone
- Keep it simple (to start)
- Build up the organization

AI/ML Use Cases

Demand Forecasting

Business Scenario

- Business transformation project
- Required out of box solution for forecasting

Data Requirement

- Historical data sales, inventory etc..
- Related data like product description, promotions etc..

Advanced Analytics Solution

- The Forecasting model automatically selects the right algorithm needed
- Generates predictions for selected future period by granularity

Business Value

- Supply & Replenishment planning
- Demand Planning
- Inventory Planning

Demand Forecasting

Initial Set-up

Historical ASW Data

Train models on historical data

Azure ML Models

Continually update models with new data

ML models provide new forecasts on demand

Production Process

Dynamics 365

- Gather transactional historical data from the database

Microsoft Machine Learning

- Use machine learning to generate forecast based on historical demand

Dynamics 365 Master Planning

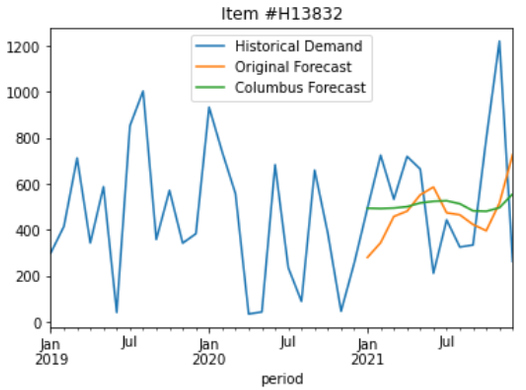
- View and make changes to forecast

Dynamics 365 for Operations

- Authorize forecast

Output (snippet)

Item	Item description	Period	Demand	Forecast
000030009	SEAL GREASE 2.375 SFT D/.375WD	201901	36	22
000030011	SEAL 2.250 SHAFT DIA X .375 WD	201901	72	52
000030012	SEAL 1.625 SHAFT DIA X .312 WD	201901	56	31
000030013	SEAL 1.250 SHAFT DIA X .250 WD	201901	10	21
000030014	SEAL 48MM SHAFT DIA X 7,8MM WD	201901	18	23
000030015	SEAL GREASE 1.750 SFT D/.312WD	201901	2	6
000030016	SEAL .875 SHAFT DIA X .250 WD	201901	14	11
000030017	SEAL 32MM SHAFT DIA X 7-10MM W	201901	25	14
000030018	SEAL GREASE 1.500 SFT D/.312WD	201901	4	7
35414	RING QUAD Q4327 FKM 030 PUMP	201901	6	9



Glass Breakage Prediction

Business Scenario

- To predict the glass breakage
- Identify the key parameters

Data Requirement

- Sensor data at each zone
- Chemistry Data
- Raw Material components Data

Advanced Analytics Solution

- The ML model predicts:
  - Average breakage per hour
  - Probability of breakage per hour

Business Value

- Enables enhanced preventive measures and corrective actions

- Reduces the Glass Breakage & Wastage
- Reduces their downtime in production hours.

Glass Breakage Prediction

Furnace Data:

Breakage Data:

Chemistry Data:

Raw Material Data:

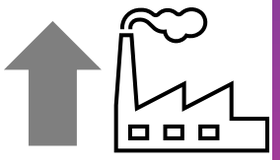
Model:
The ML model automatically inspects data & key attributes to predict average breakage per hour

AI

Predictions:
The ML model predicts key Indicators influencing breakage & average breakage per hour

Preventive corrective actions

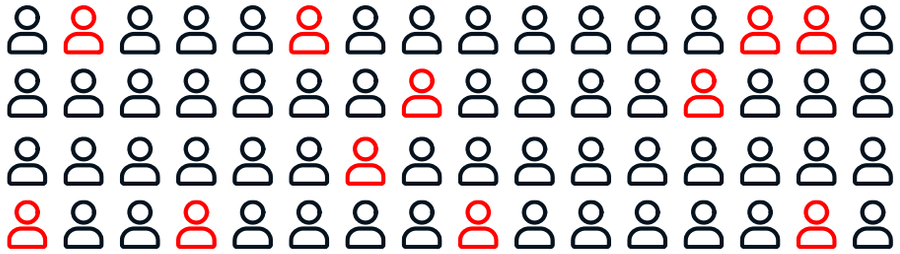
Production Output



Reduction in downtime by 30%

Reduces Maintenance cost by 5%

Churn Analysis



Customer likely to churn

Business Scenario

- Retail Giant has Customer base of 1M
- Cost of acquisition & rate of customer churn is increasing rapidly
- Need to address which customers are likely to churn

Data Requirement

- Multiple pieces of data from multiple sources

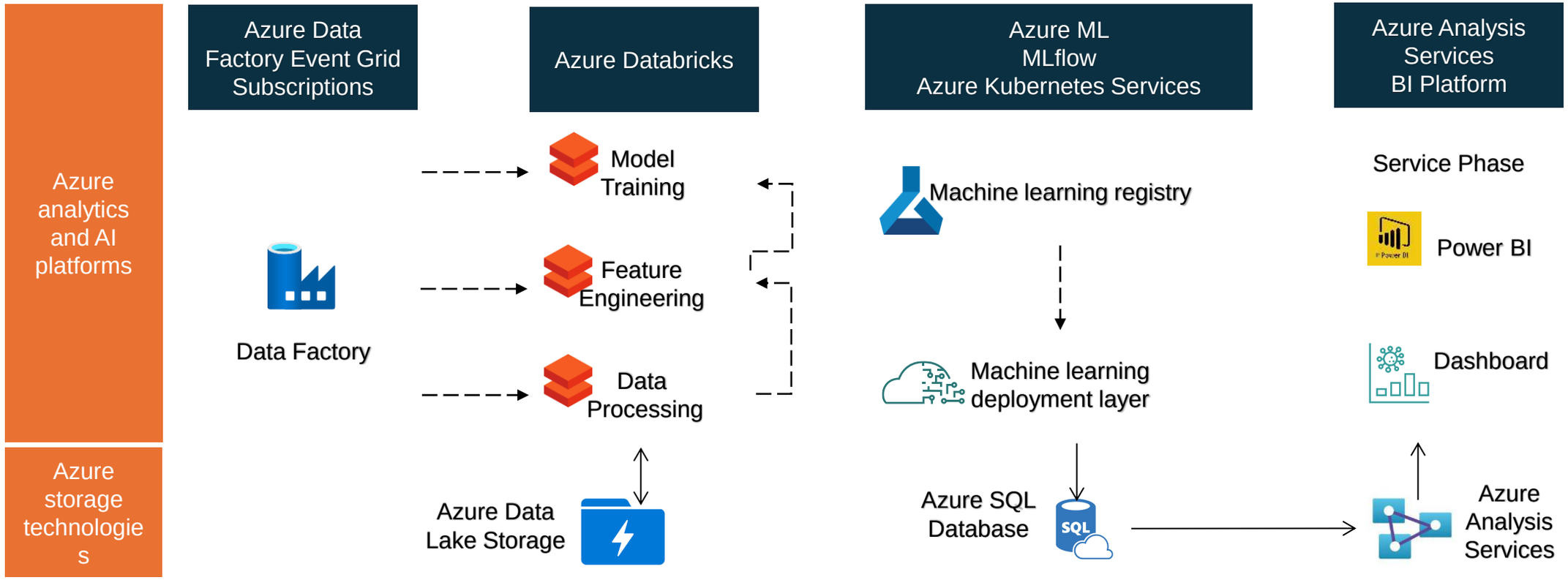
Available Solution

- Retention/churn model using AIML Algorithms
  - Identify the propensity of churn
  - High-value customers

Business Value

- CRM metrics to build retention strategy
- Hi Churn prob cust need to be addressed
- Low churn prob cust should be encouraged
- Generate different segments/clusters of customer base

Churn Analysis



Predictive Maintenance

Business Scenario

- Unforeseen Failure of the machine

Data Requirement

- Sensor data and RUL(remaining useful life) data

Advanced Analytics Solution

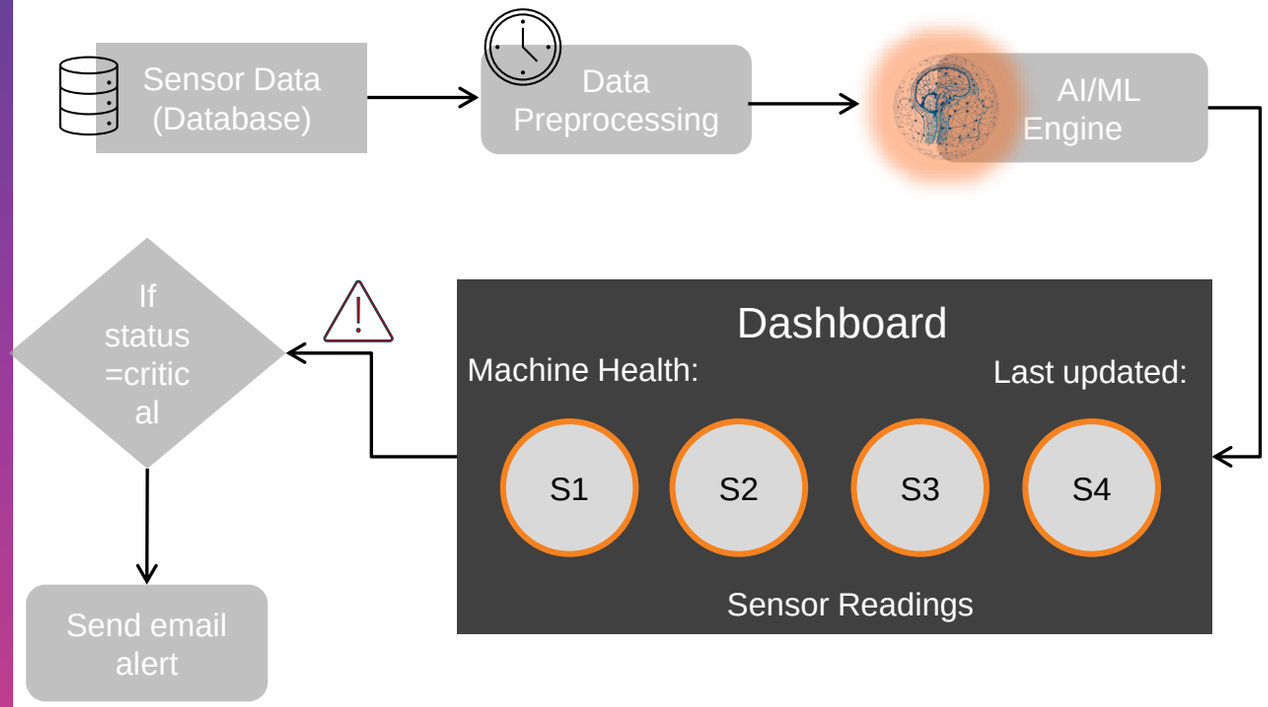
- Use historical patterns to predict the health of the machine
- Retrain the model to adjust to any changes in the data patterns

Business Value

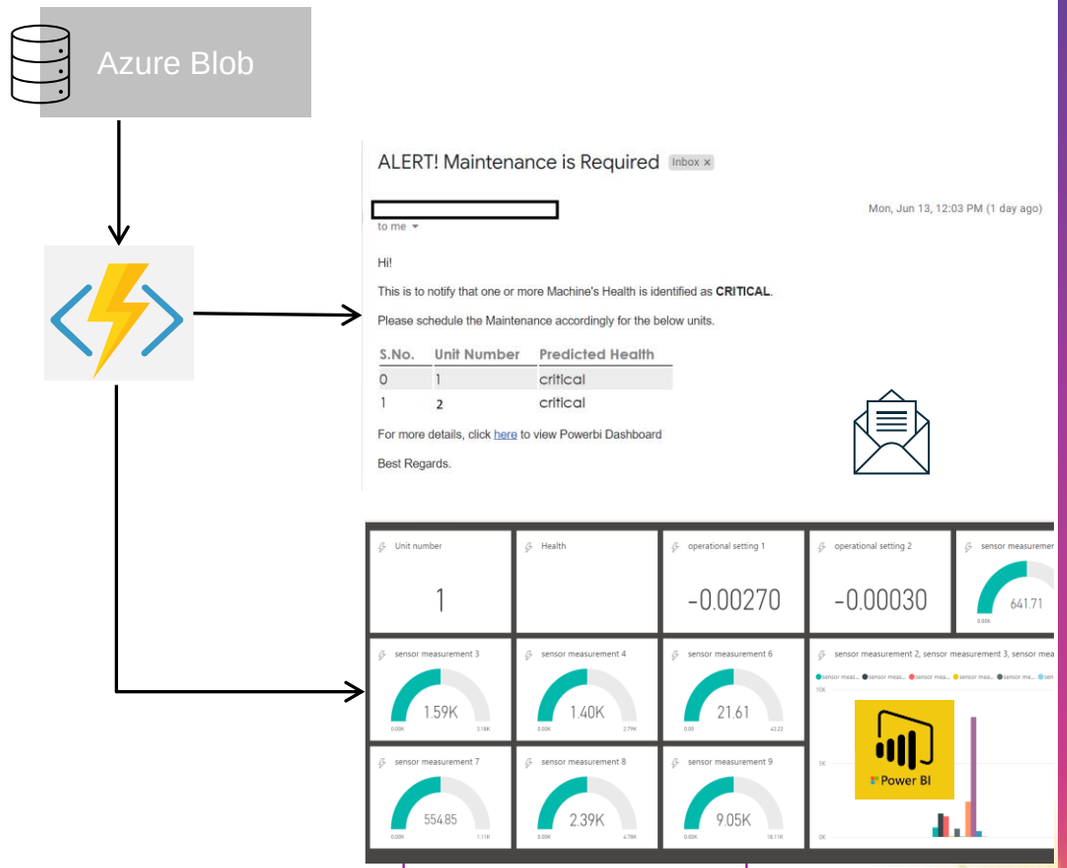
- Identifies the issues, lowering maintenance costs and reduces outages time
- Reduce the need for purchase or storage of replacement parts of the crucial equipment

- Reduce downtimes and increase productivity
- Increase ROI

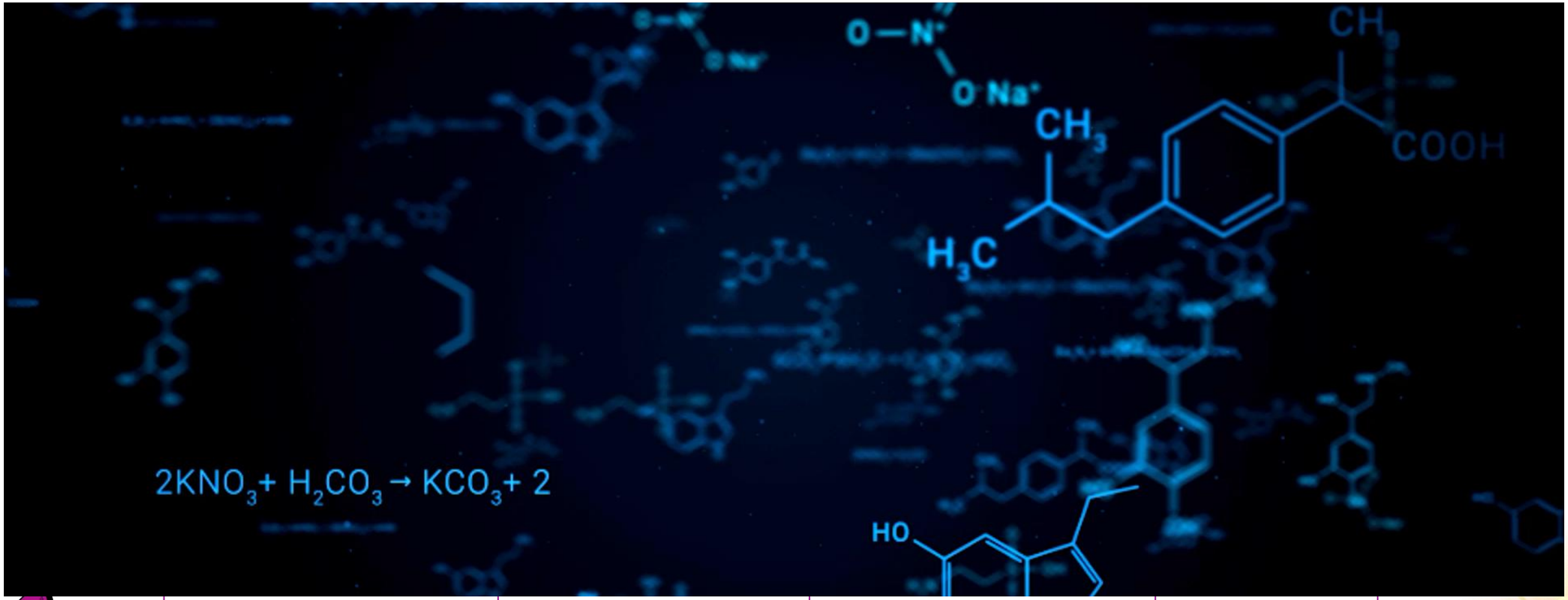
Predictive Maintenance



Technical Workflow



AI/ML Scenarios



AI/ML Scenarios By Industry

Manufacturing

- Predictive Maintenance or condition monitoring
- Supply chain management
- Demand forecasting
- Process optimization

Retail

- Predictive Inventory planning
- Recommendation engine
- Customer Analytics
- Customer Churn, ROI & Life time value

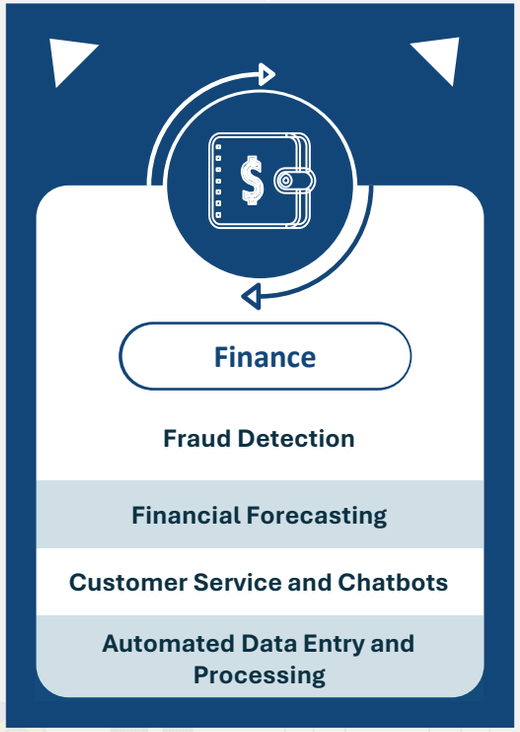
Energy & Utilities

- Power usage Analytics
- Seismic data processing
- Smart grid management
- Energy demand & Supply optimization

Food & Beverages

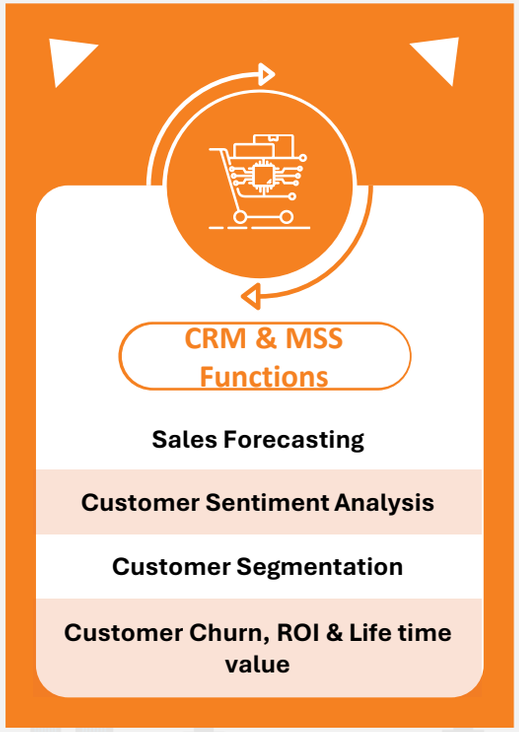
- Sorting Products and packages
- Food safety compliance
- Product development
- Market Mix model

AI/ML Scenarios By Business Line



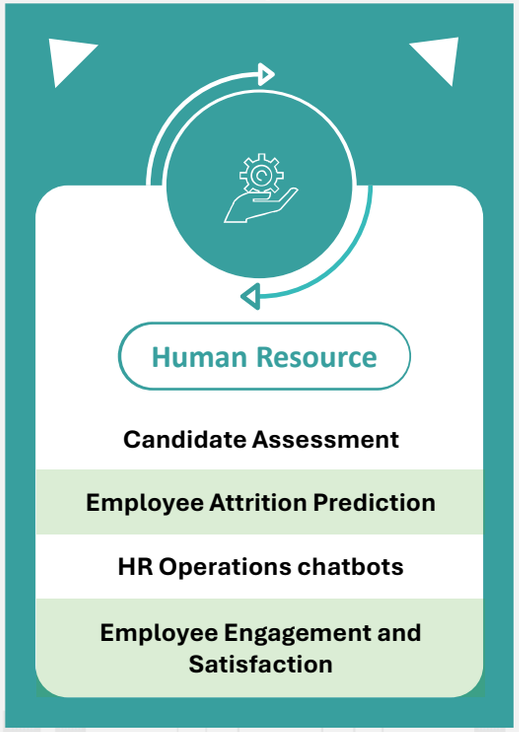
Finance

- Fraud Detection
- Financial Forecasting
- Customer Service and Chatbots
- Automated Data Entry and Processing



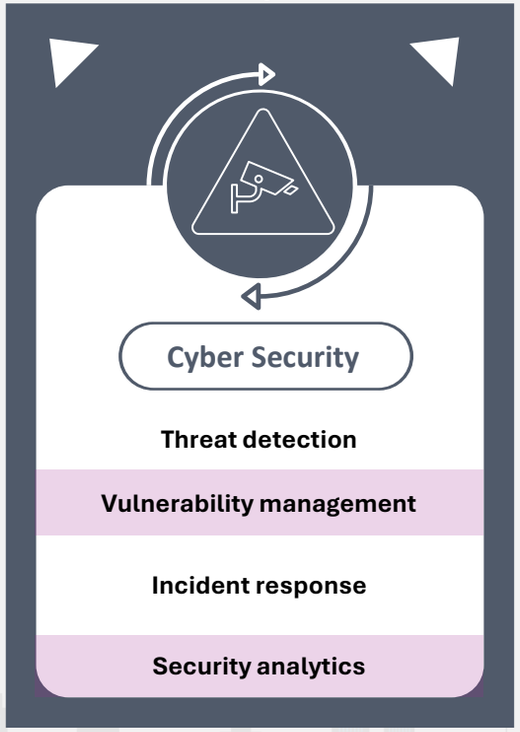
CRM & MSS Functions

- Sales Forecasting
- Customer Sentiment Analysis
- Customer Segmentation
- Customer Churn, ROI & Life time value



Human Resource

- Candidate Assessment
- Employee Attrition Prediction
- HR Operations chatbots
- Employee Engagement and Satisfaction



Cyber Security

- Threat detection
- Vulnerability management
- Incident response
- Security analytics

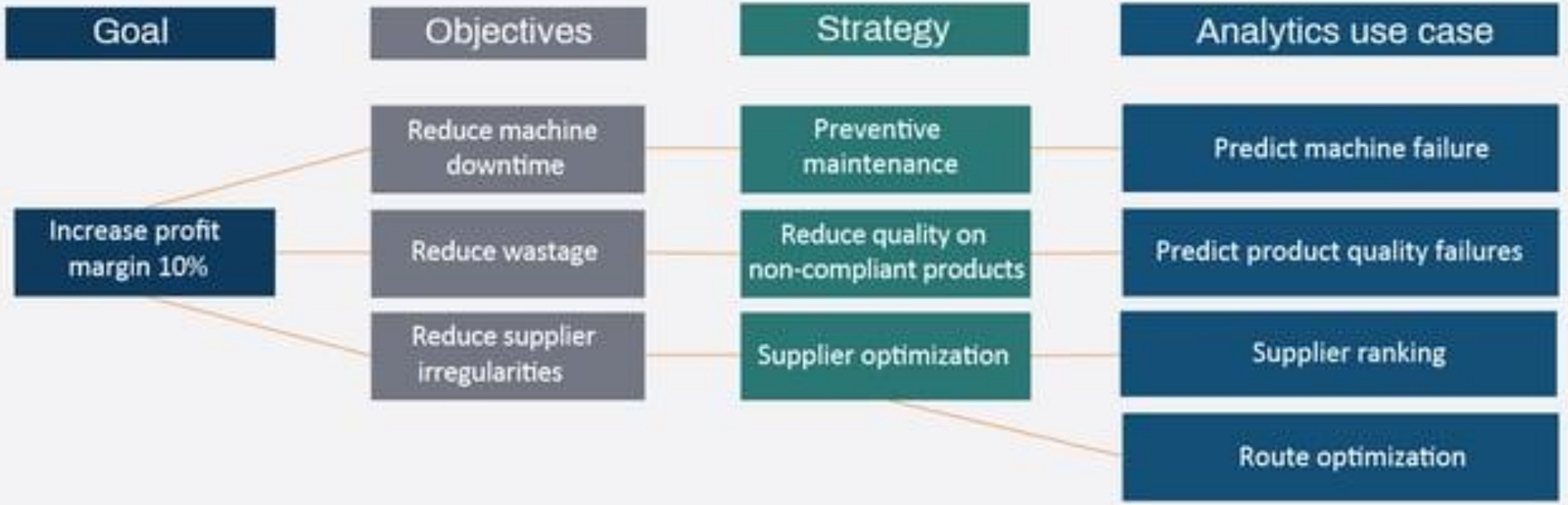
Steps to a Successful AI Project

Focus Areas of Success with Advanced Analytics

How do I Derive Benefit from AI?

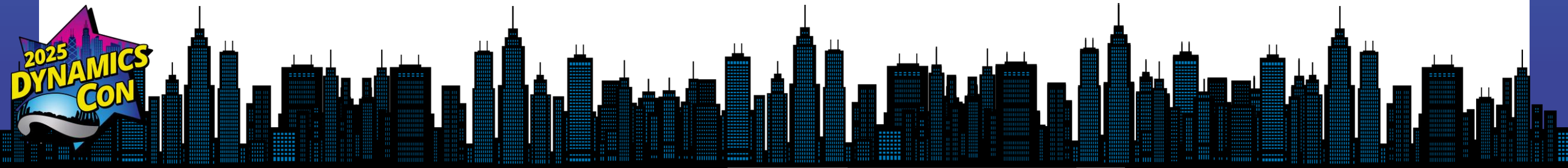
Why | Prioritize | Pilot | Operation | Capability | Evaluations

How to find an AI solution that is right for your business



How to find an AI solution that is right for your business

- Pain Points
- Market Research and Trends
- Competitor Analysis
- Exploring Existing Data
- Prioritization



A problem-solving approach from three perspectives

USER NEEDS:
Does the solution address the needs and pain points of the target users?

USER EXPERIENCE:
Is the solution designed with a compelling and intuitive user experience?

BRAND ALIGNMENT:
Does the solution align with the organization's brand identity and values?

TECHNICAL CAPABILITIES:
Can the solution be built using existing or emerging technologies?

RESOURCE AVAILABILITY:
Are the required resources, such as time, budget, and human capital, available to execute the project?

SCALABILITY:
Can the solution be scaled to meet the target market's demands or future growth?

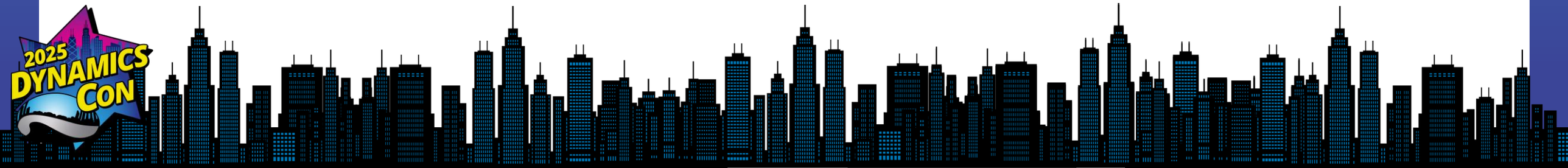
BUSINESS MODEL:
Does the solution provide business model a comparative/competitive advantage?

INTERNAL DEMAND:
Is there a significant internal need or demand for the proposed solution?

COMPETITIVE LANDSCAPE:
Does this help us differentiate from competitors and withstand market pressures?

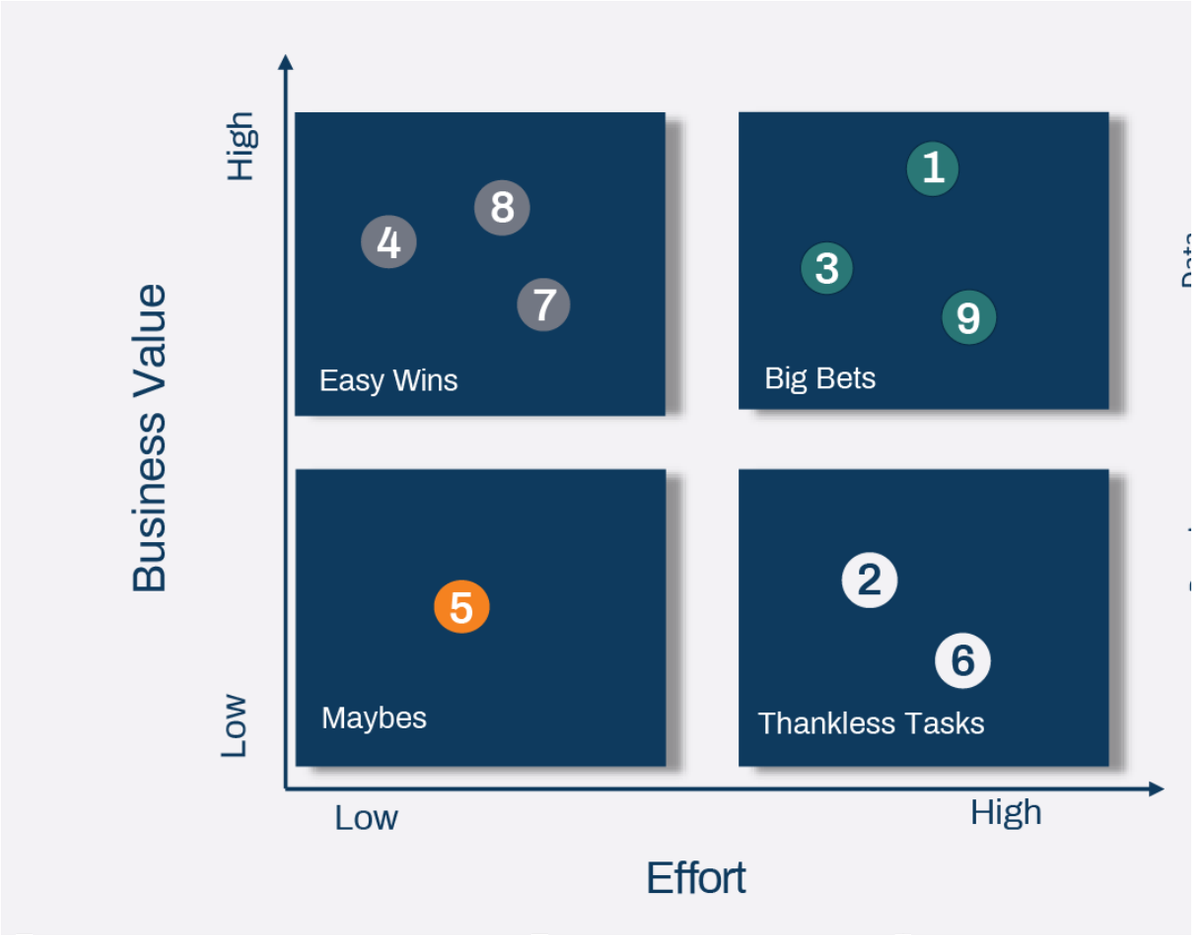
The Discover Phase – AI Use Case Alignment

- Business: Is the AI project contributing to reaching business goals?
- Usage: Is the AI project viable?
- Functional: Do you have the organizational resources?
- Implementation: Do you have the right AI capabilities?



Evaluate Effort and Value

- Easy wins = Less effort and more value
- Big bets = More effort and more value
- Maybes = Less effort and less value
- Thankless tasks = More effort and less value

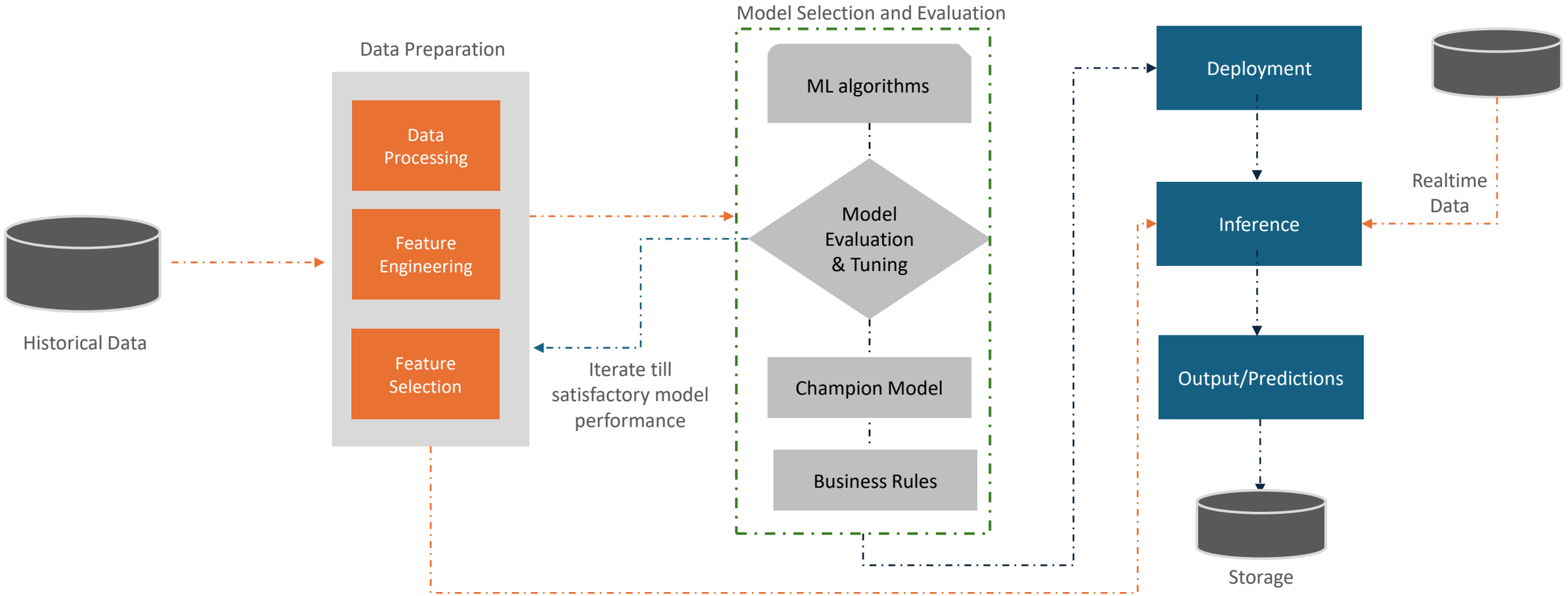


Make It Work

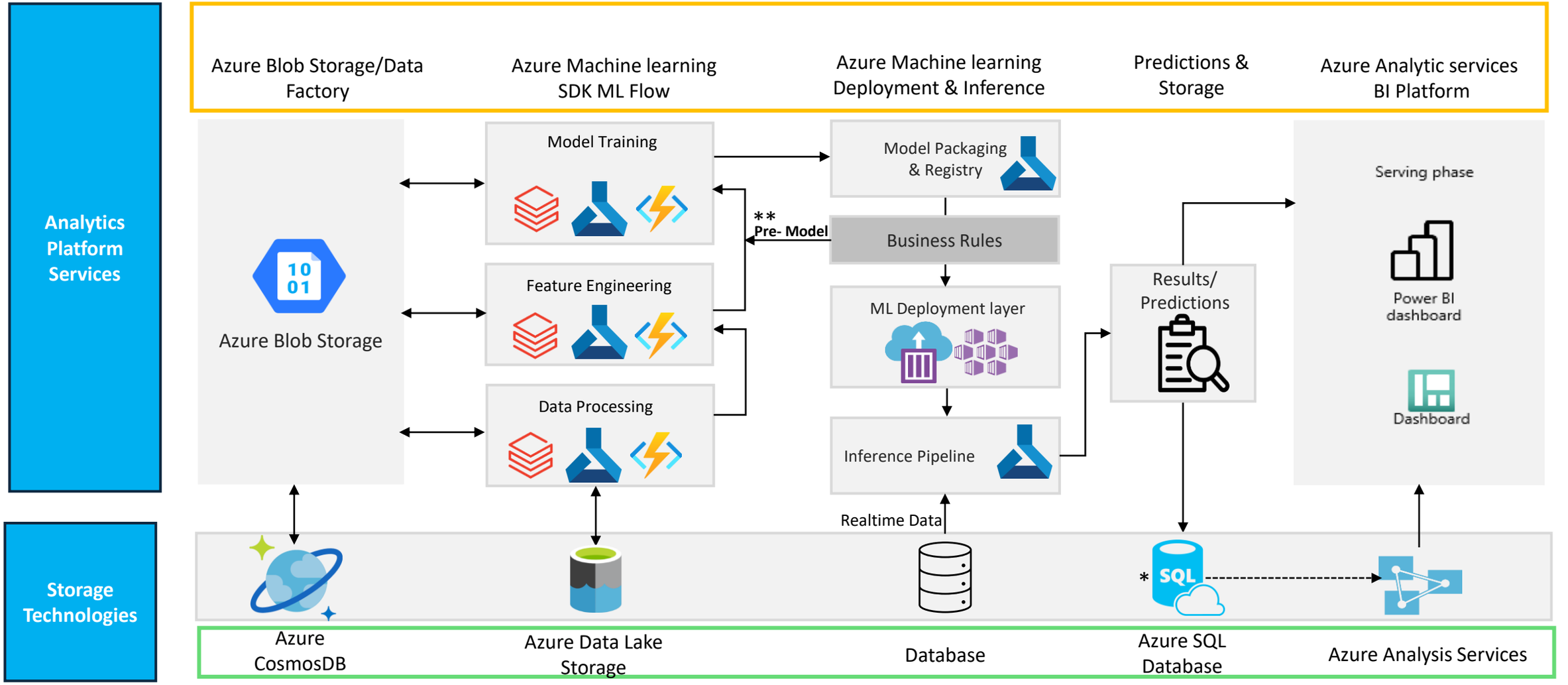
AI/ML Logical Process Flow

- Prepare and pre-process data to fit machine learning model

- Explore the data to understand dependencies and fit ML model to identify patterns



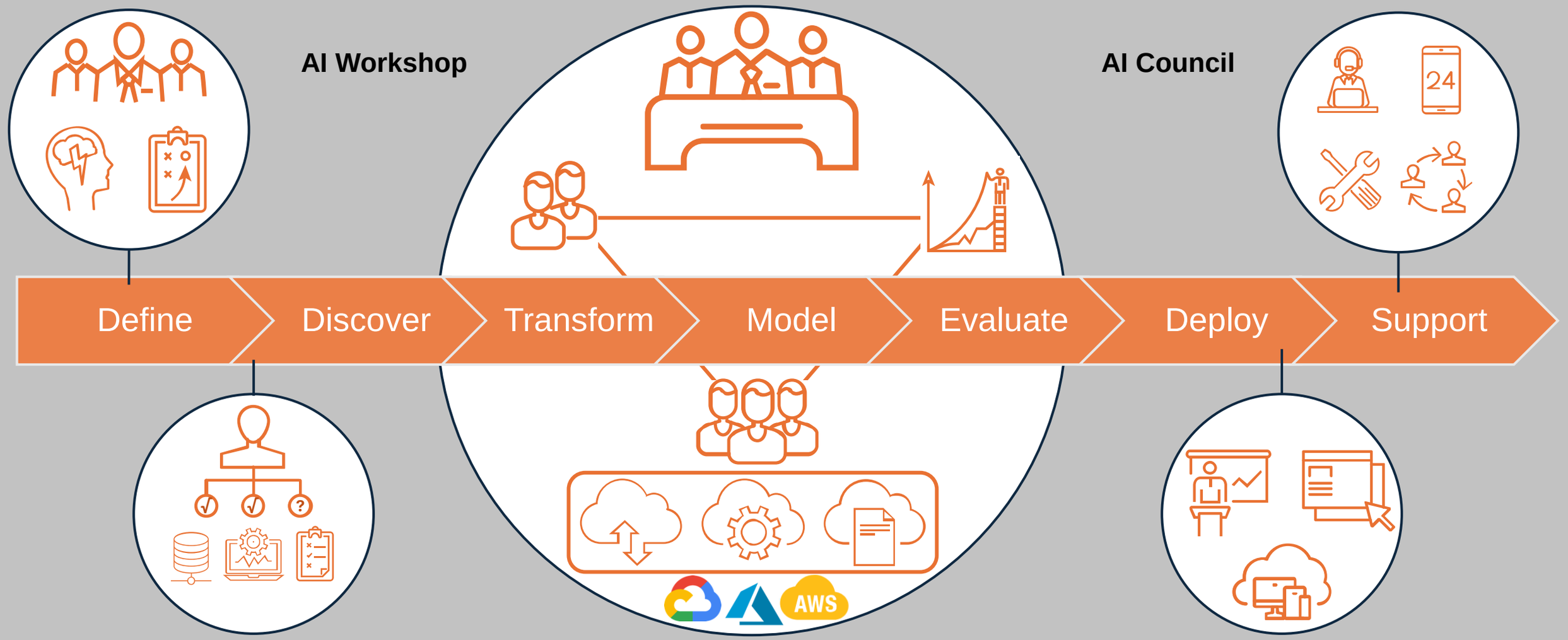
AI/ML Technical Architecture



* Note: The Output/Predictions can be stored in any format and to any storage account (CRM systems, ERP systems, client databases, etc.....)

** Business rules are applied based on client requirement, either before the model is trained or after final model

AIML Methodology



Machine Learning Life Cycle

Business Understanding

Data Understanding

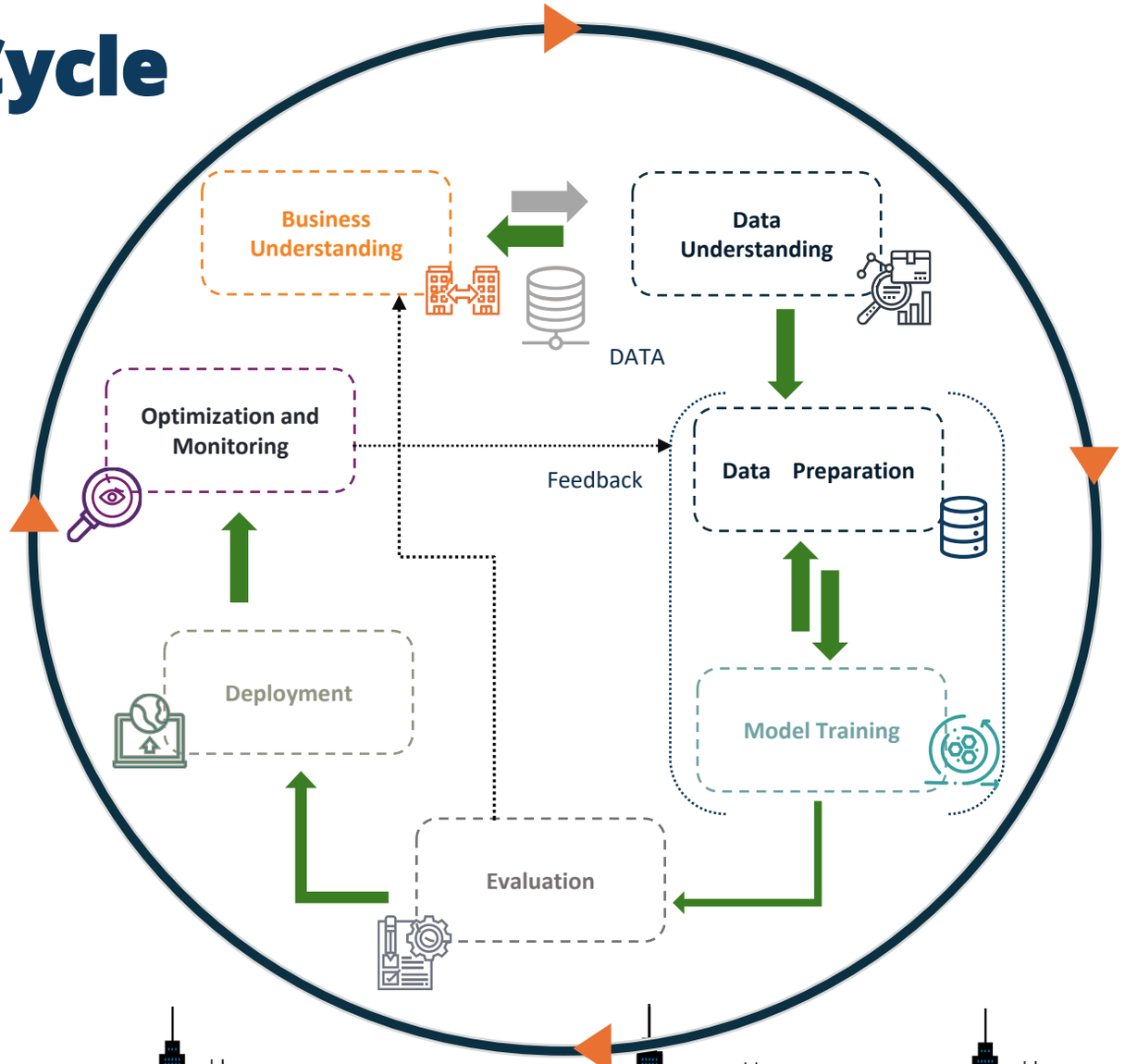
Data Preparation

Model Training

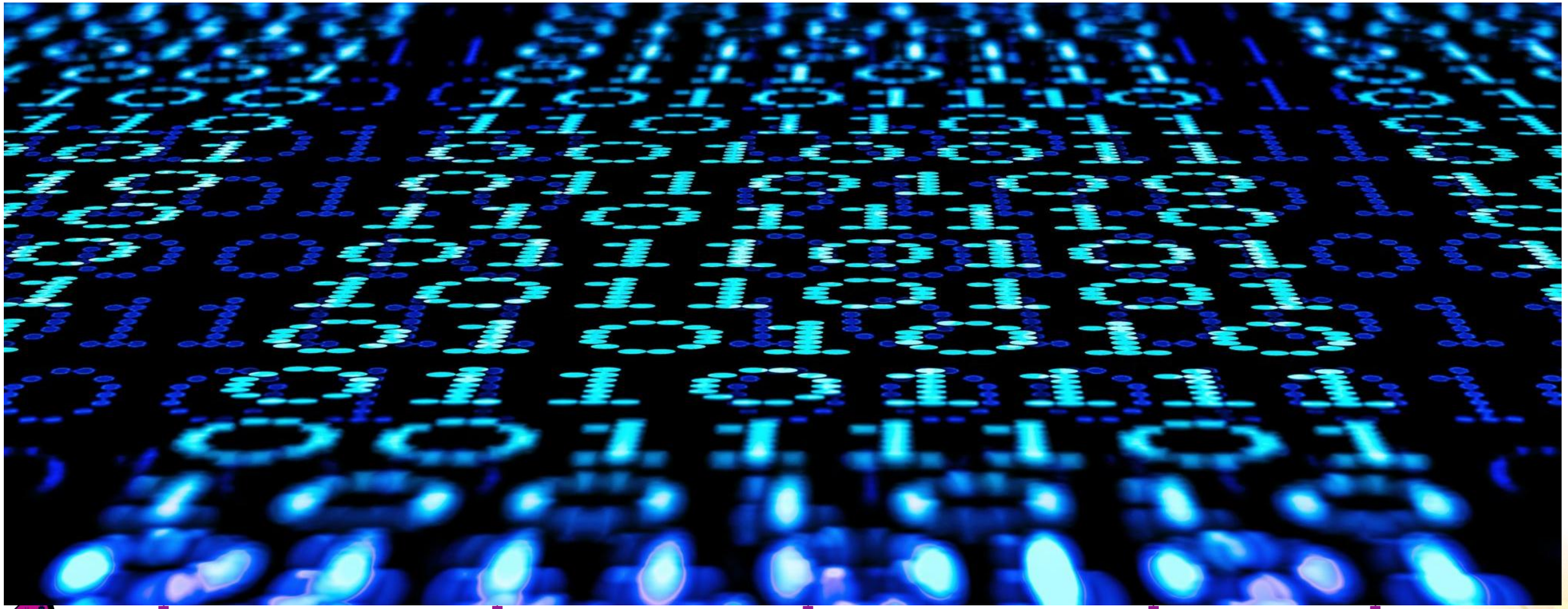
Evaluation

Deployment

Optimization and Monitoring



Data Fabric and AI



Microsoft Fabric does it all—in a unified solution

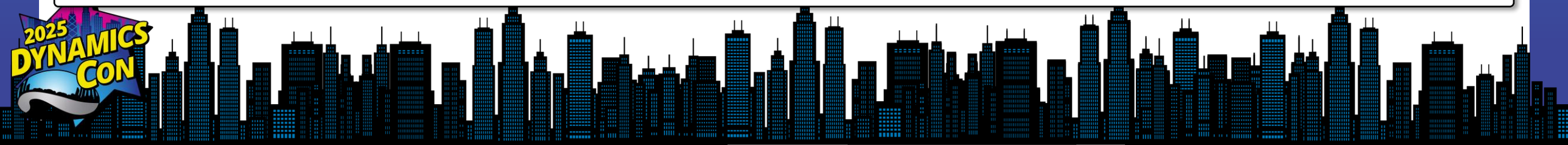
An end-to-end analytics platform that brings together all the data and analytics tools that organizations need to go from the data lake to the business user

Data Integration	Data Engineering	Data Warehouse	Data Science	Real Time Analytics	Business Intelligence	Observability
Data Factory	Synapse	Synapse	Synapse	Synapse	Power BI	Data Activator

Unified data foundation
OneLake

UNIFIED

SaaS product experience | Security and governance | Compute and storage | Business model



Empower your data professionals to move faster and unlock more value from your data

- Data Engineers

- **Execute faster** with the ability to spin up a Spark VM cluster in seconds, or configure with familiar experiences like Git DevOps pipelines for data engineering artifacts
- **Streamline your work** with a single platform to build and operate real-time analytics pipelines, data lakes, lake houses, warehouses, marts, and cubes using your preferred IDE, plug-ins, and tools.
- **Reduce costly data replication** and movement with the ability to produce base datasets that can serve data analysts and data scientists without needing to build pipelines

Supporting experiences:

Data Factory

Data Warehouse

Data Engineering

Real-time analytics

Serve data via warehouse or lakehouse

- Data Scientists

- **Quickly tune a custom model** by integrating a model built and trained in Azure ML in a Spark notebook
- **Work faster** with the ability to user your preferred data science frameworks, languages, and tools
- **Bypass engineering dependencies** with the ability to use your preferred no-code ML Ops to deploy and operate models in production
- **Tap into proven-at-scale models and services** to accelerate your AI differentiation (AOAI, Cognitive Services, ONNX integration, etc).

Supporting experiences

Data Science

Azure ML

Serve transformed data

- Data Analysts

- **Avoid slow, progress-stagnating data wrangling** by seamlessly triggering a workflow that can unlock data engineering tools and capabilities quickly.
- **Accelerate your work** with visual and SQL based tools for self-serve data transformations and modeling as well as self-serve tools for reporting, dashboards, and data visualizations
- **Turn data into impact** with industry-leading BI tools and integration with the apps your people use everyday like Microsoft 365

Supporting experiences

Data Warehouse

Real-time analytics

Power BI

Serve insights via embedding

- Data Citizens

- **Make more data-driven decisions** with actionable insights and intelligence in your preferred applications
- **Maintain access to all the data you need**, without being overwhelmed by data ancillary to your role thanks to fine grain data access management controls

Supporting experiences

Power BI

Microsoft 365

Serve data via warehouse or lakehouse

Data Stewards

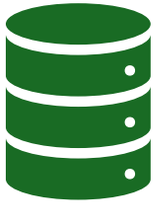
- **Maintain visibility and control of costs** with a unified consumption and cost model that provides evergreen spend optics on your end-to-end data estate
- **Gain full visibility and governance** over your entire analytics estate from data sources and connections to your data lake, to users and their insights

Executive Summary

- Artificial Intelligence (AI) is rapidly transforming industries, driving efficiency, enhancing decision-making, and unlocking new opportunities for innovation.

- Before an organization can harness the power of AI, it's critical to assess its readiness for AI adoption.

Executive Summary



Data Readiness:

Data is the foundation of any AI system

Companies must assess:

- Data Quality and Quantity
- Data Infrastructure

Strategic Alignment and Leadership:

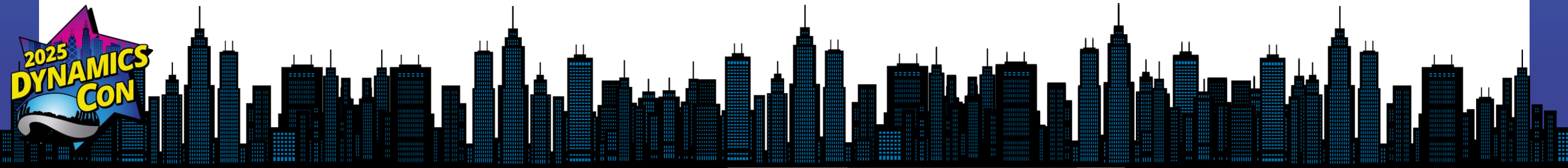
AI adoption requires strong leadership and alignment with business goals

- Leadership Buy-In
- Clear AI Strategy

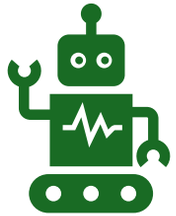
Technological Infrastructure:

AI requires advanced technology tools and platforms to succeed

- Technology Stack
- Integration Capabilities



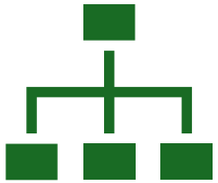
Executive Summary



Skills and Talent:

AI implementation demands specialized expertise

- In-House Skills
- Talent Acquisition and Development



Organizational Culture:

Adopting AI often requires a cultural shift

- Change Management
- Cross-Department Collaboration

Risk Mgmt & Ethical Considerations:

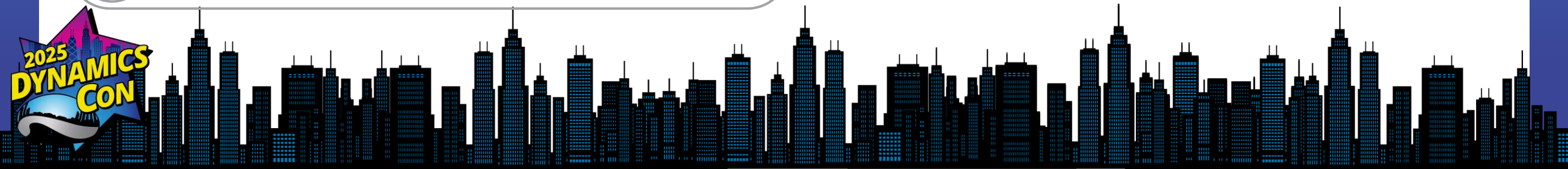
AI introduces new risks that must be mitigated

- Data Privacy and Security
- Ethical AI

Benefits Advance Analytics (AI/ML)

- Generate business insights to make Smarter Decisions
- Improve Customer Experience
- Enhance Productivity
- Prevent Human Errors
- Save Time and Money

Artificial Intelligence & Machine learning tools are key enablers for Digital transformation



Key take-aways

- Build an AI Strategy
  - Adoption
  - Enablement
  - Scale
- Leverage Use Cases
- Create the Business Need Alignment
- Prioritize
- Choose a Framework

Suggested Resources

- Microsoft Learn
  - Microsoft Azure AI Fundamentals: Get started with artificial intelligence
  - Transform your Business with Microsoft AI
  - Create machine learning models
  - Understand data science for machine learning
  - Many more….
- Reference materials
  - Gartner Predicts the Future of AI
  - Gartner Data Analytics Business Strategy
  - Comptia AI Statistics
  - Machine Learning Times
  - Data Science Central

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