# ARAMCO Digital Experience for Executive Program (DEEP) with Microsoft

**Visit to Microsoft HQ**
15th September 2025

Prepared by:
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Senior Industry Director
Worldwide Energy and Resources
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# AGENDA  |  Microsoft Experience Center One  | 15th September 2025

| Time | Session | Duration | Presenter |
|------|---------|----------|-----------|
| 7:45 – 8:15 am | **Breakfast** | 30 mins | |
| 8:15 – 8:25 am | **Welcoming and Practicalities**<br>*Greet leaders from Aramco's businesses and practicalities for the day to ensure the plan goes smoothly* | 10 mins | **Faiz Sulaiman**<br>Senior Director, Worldwide Energy and Resources, Microsoft |
| 8:25 – 8:30 am | **Aramco Intro and Context**<br>*Setting up the tone from Aramco on expectations and desired outcome from the engagement* | 5 mins | **Bandar Al Mashari**<br>CIO and Director IT, Aramco Americas |
| 8:30 – 9:00 am | **Microsoft Cloud Operation and Innovation +Update on KSA Datacenter**<br>*Opening up the session to cover on Microsoft license to operate, focusing a lot on infra and innovation. Sharing the timeline and how Microsoft and Aramco could trailblazing our way in the next few months.* | 30 mins | **Adrian Maziak**<br>GM, Cloud Operations and Innovation, Microsoft |
| 9:00 - 9:30 am | **Energy and AI**<br>*Focusing on our impact and outlook* | 30 mins | **Sverre Brandsberg-Dahl**<br>GM, Azure Core, Energy Industry. Microsoft |
| 9:30 - 10:00 am | **Break** | 30 mins | |
| 10:00 - 10:30am | **Industrial AI**<br>*Microsoft plan for industry transformation* | 30 mins | **Matt Kerner**<br>CVP, CTO of Industry and Partners Solutions |
| 10:30 - 11:00am | **Microsoft on becoming the Frontier Firm**<br>*Microsoft own Strategy and Transformation* | 30 mins | **Kathleen Hogan**<br>EVP, Office of Strategy and Transformation, Microsoft |
| 11:00 – 12:00pm | **Feel the tech - Immersive Experience** | 60 mins | EC One |
| 12:00pm | **Adjourn** | | |

# Global snapshot

### ~8 billion people
- Population rate of increase ~67mm/year
- ~1B people have no access to electricity, first global increase of 20 million in 2022

### $13 trillion AI GDP impact
- By 2030, AI has potential to add 16% ($13 Trillion) to the global economy
- 6-9% of people will be working in professions that don't yet exist by 2030

### 7.6Gt of $CO_2$ must be captured by 2050
- Global $CO_2$ grew 321Mt to all-time high of 36.8Gt in 2022
- Renewable energy share must increase to 70% by 2050

# Forces driving the future of energy

## Access
~**1B people** in the world do not have stable or affordable access to power

## Demand
Renewable energy sources are expected to provide between **45 and 50%** of global generation by 2030

## Security
Concerns about power production and **national security of power**

## Climate
The energy sector accounts for **>70%** of global carbon emissions

## Workforce
**Attracting and skilling** talent, aging workforce, and skills shortages

Ever-increasing role and impact of AI

Enhanced cyber and physical security concerns and mitigations

# The Energy & Resources Industry

Microsoft works with companies to **infuse AI transformation** opportunities across three main verticals

## Power & Utilities

## Oil & Gas

## Mining

# In moments of uncertainty

The only path forward is continued and accelerated innovation



**Agile, resilient and secured value chain**



**Decarbonization and sustainable energy transition**



**Attract, reskill the future workforce**

# Microsoft Energy & Resources principles

## Principles

1. Microsoft will increase its engineering investments and efforts in low and zero carbon businesses to help accelerate the energy transition.

2. Microsoft is committed to helping all customers, including all energy customers, in the development of effective net zero commitments.

3. Microsoft will sell its commercially available software technology and cloud services to all customers, inclusive of energy customers.

4. Microsoft may provide technical and engineering resources to develop or co-develop specialized services for subsurface exploration and extraction of fossil fuels with energy customers who have publicly committed to Net Zero carbon targets.

# Decades of action by Microsoft

Our history

Our commitments

| 2012 | 2018 | 2020 | 2025 | 2030 | 2050 |

**2012** > **2018** > **2020** > **2025** > **2030** > **2050**

Carbon neutral

50%

60%

100%

Carbon negative, zero waste, water positive with diesel-free datacenters

Removal of all historic carbon emitted directly or through electrical consumption

Supply of clean energy
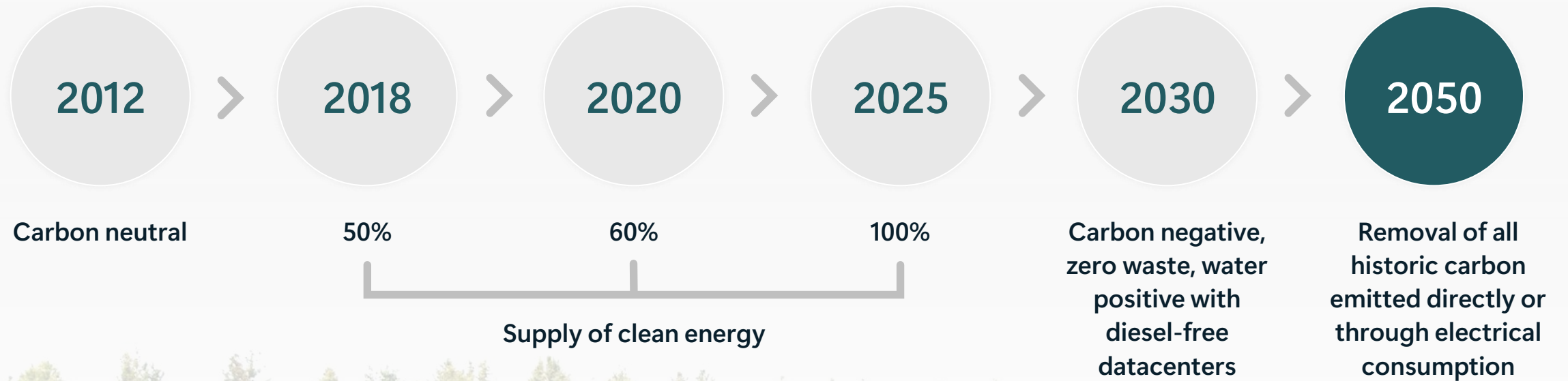
# AI impacts the bottom line

IDC conducted a global study that provides unique insights into the business value of AI

For every $1 companies invest in AI, they **realize an average return of $3.50**

92% of AI deployments are taking **12 months or less**

40% of organizations had implementation times of **less than 6 months**

Organizations are realizing a **return on their AI investments within 14 months** of deployments on average

# Four elements of successful digital transformation

**Vision & Strategy**

**Culture**

**Differentiation**

**Capabilities**

# Microsoft Cloud Operation and Innovation
# +Update on KSA Datacenter

Adrian Maziak
GM, Infrastructure Planning and Execution,
Cloud Operation and Innovation
Microsoft
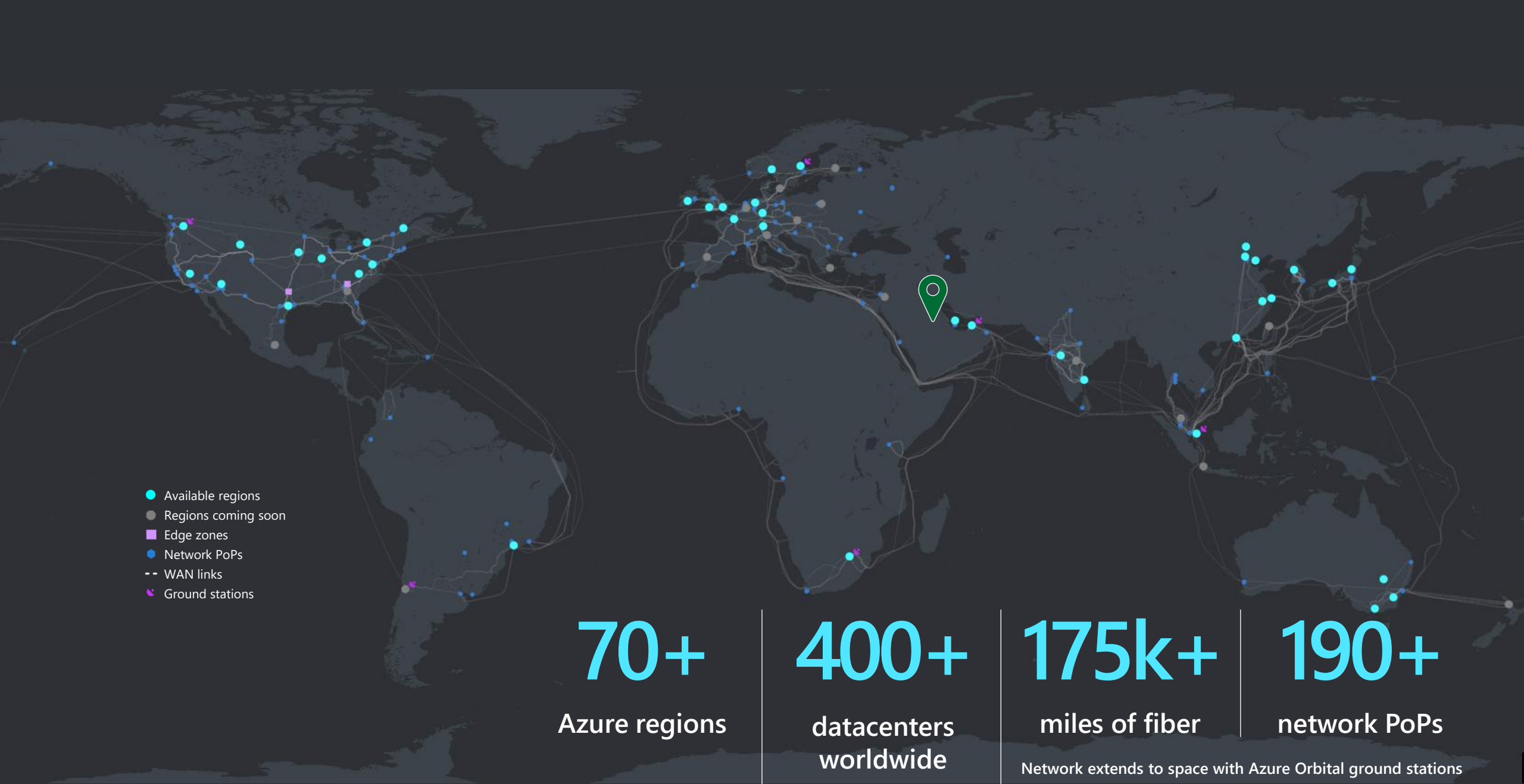
Legend:
- Available regions
- Regions coming soon
- Edge zones
- Network PoPs
- WAN links
- Ground stations

**70+**
Azure regions

**400+**
datacenters worldwide

**175k+**
miles of fiber

**190+**
network PoPs

Network extends to space with Azure Orbital ground stations

# Saudi Arabia East
# Resiliency from day 1

When an Azure region supports Availability Zones, the region is composed of three physically-separated zones (each composed of one or more datacenters).

- **Each zone has completely independent power, cooling, and networking infrastructure**

A facility-level failure (such as a datacenter outage) will affect only one Availability Zone within the region.

- **Three zones is the minimum to support quorum-based workloads (such as SQL, Service Fabric, or MongoDB)**

Region 1

Availability Zone 1

Availability Zone 2

Availability Zone 3

Global Azure Infrastructure
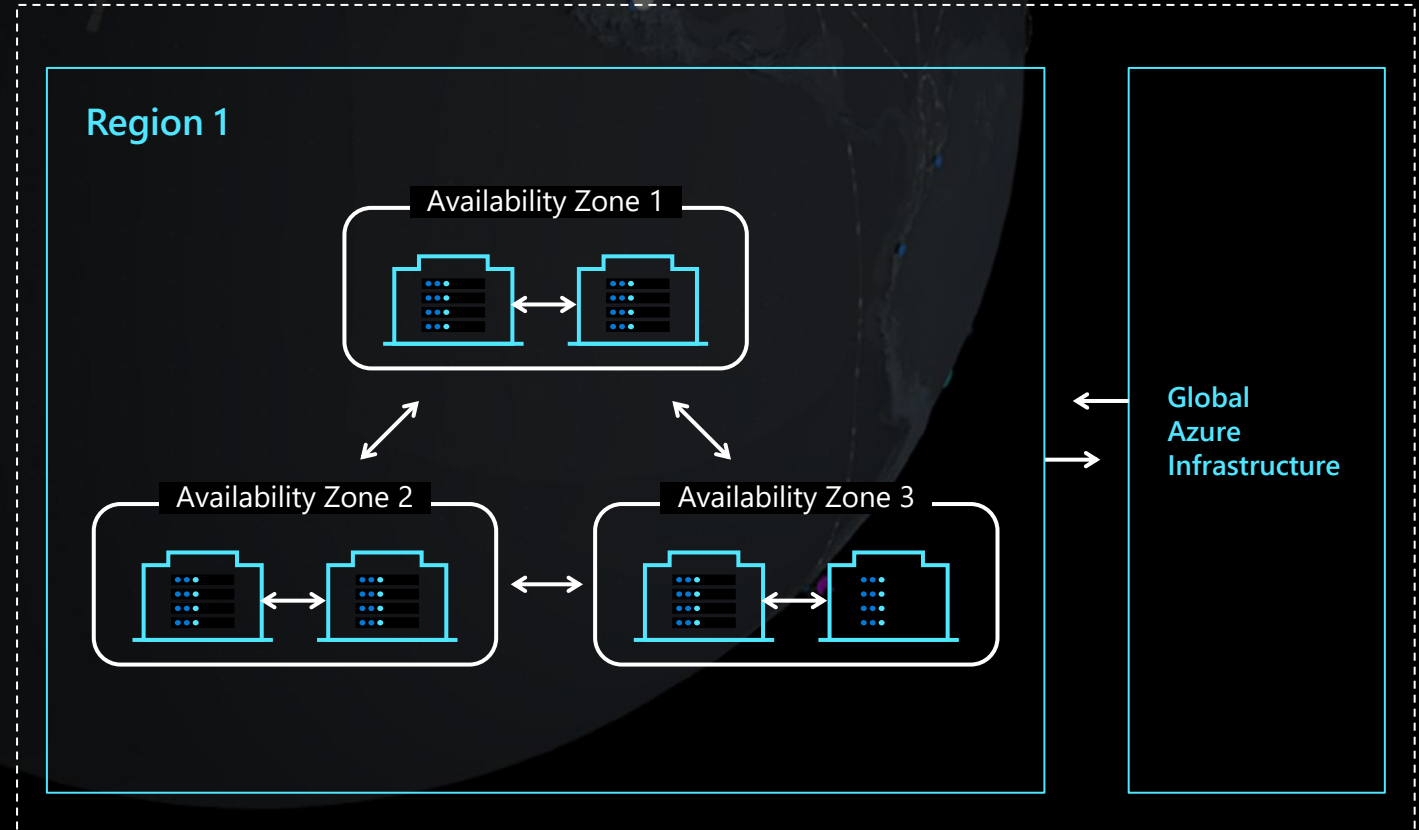
# Saudi East will offer a rich set of Products and Services

Strategic (on demand)

Mainstream

Foundational

- 100% coverage of Foundational at Launch

- 100% coverage of Mainstream services 6-9 months post-launch

- Strategic Services on demand

- Rich ecosystem of 3rd party providers

vmware    SAP    NetApp    Office 365    mongo DB    ORACLE    snowflake    IBM

hadoop    Red Hat    GPU    databricks    (Linux)    Adobe    (Kubernetes)    Marketplace
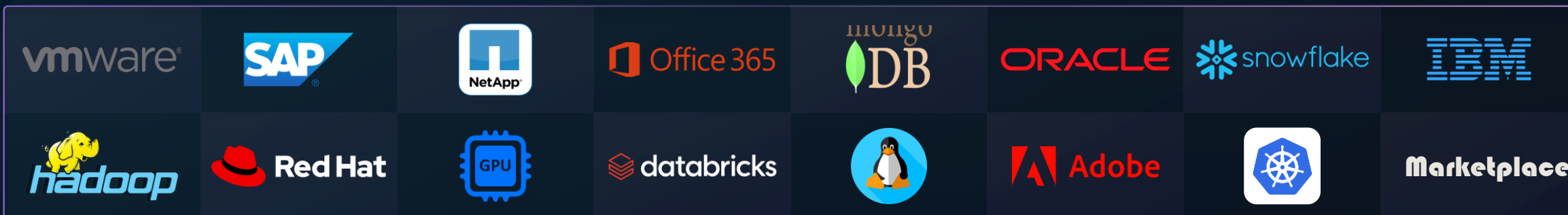
# Azure trusted cloud: over 90 certifications

Most comprehensive compliance portfolio of any cloud provider Microsoft spends $1 billion every year on cybersecurity to address security at every layer of the cloud

## Global

- ISO 27001
- ISO 27018
  ISO 27017
  ISO 22301
- SOC 1 Type 2
  SOC 2 Type 2
  SOC 3
- CSTA STAR:
  Self-Assessment
  Certification
  Attestation

## Regional

| | | |
|---|---|---|
| Argentina PDPA | EU Model Clauses | UK G-cloud |
| China DJCP | China GB 18030 | China TRUCS |
| Singapore MTCS | Australia IRAP/CCSL | New Zealand CIO |
| Japan My Number Act | ENISA IAF | Japan CS Mark Gold |
| Spain ENS | Spain DPA | India MeitY |
| Canada Privacy Laws | Privacy Shield | Germany IT Grundschutz workbook |

## Industry

| | |
|---|---|
| PCI DSS Level 1 | CDSA |
| MPAA | FACT UK |
| Shared Assessments | FISC Japan |
| HIPAA/ HITECH act | HITRUST |
| GxP 21 CFR Part 11 | MARS-E |
| IG Toolkit UK | FERPA |
| GLBA | FFIEC |

## US Government

| | |
|---|---|
| JAB P-ATO: Moderate High | DoD DISA SRG: Level 2 Level 4 Level 5 |
| SP 800-17i | FIPS 140-2 |
| Section 508 VPAT | ITAR |
| CJIS | IRS 1075 |

## KSA

Class C Operators License

# Digital sovereignty is the capability to participate in the digital economy securely, independently and with self-determined controls.

The digital sovereignty landscape is evolving, driven by growing consideration for data security, compliance and regulatory standards, and global trade and geopolitical issues.

## Our approach to digital sovereignty

**Available to all:** Digital sovereignty is a foundational capability of Microsoft services.

**Well-governed controls:** Delivered through technical, contractual, and operational measures.

**Workload dependent:** Sovereign control requirements vary based on sensitivity and criticality.

# Saudi Arabia East

## Services Scope and Delivery

**13. Progress Highlights**
*DMM22 Current Snaps*


**13. Progress Highlights**
*DMM21 Current Snaps*


**13. Progress Highlights**
*DMM23 Current Snaps*
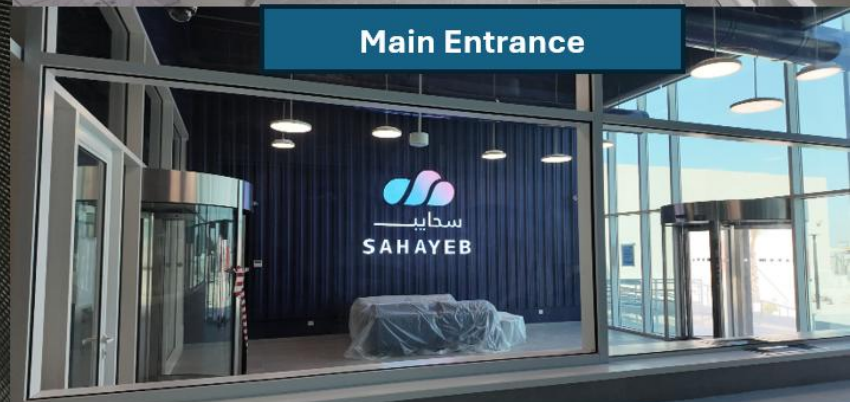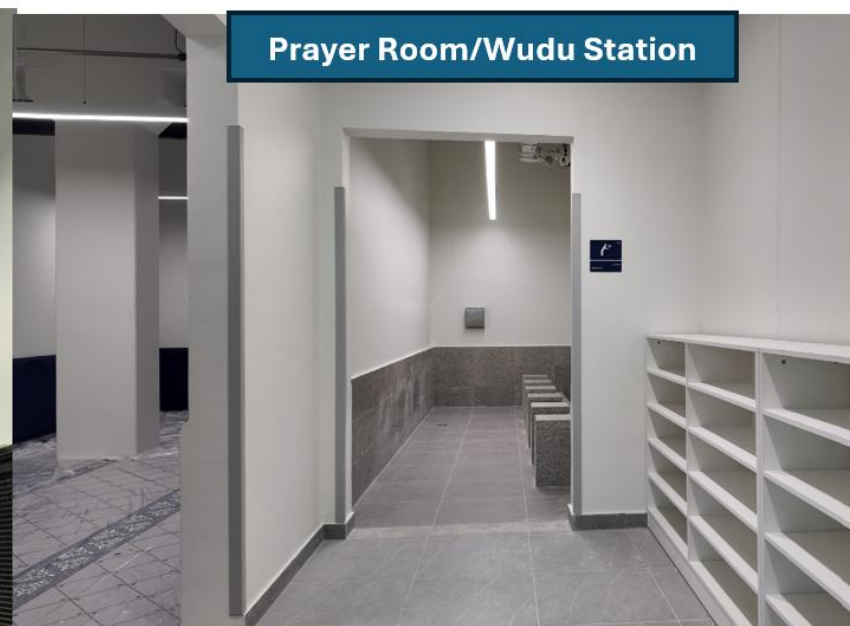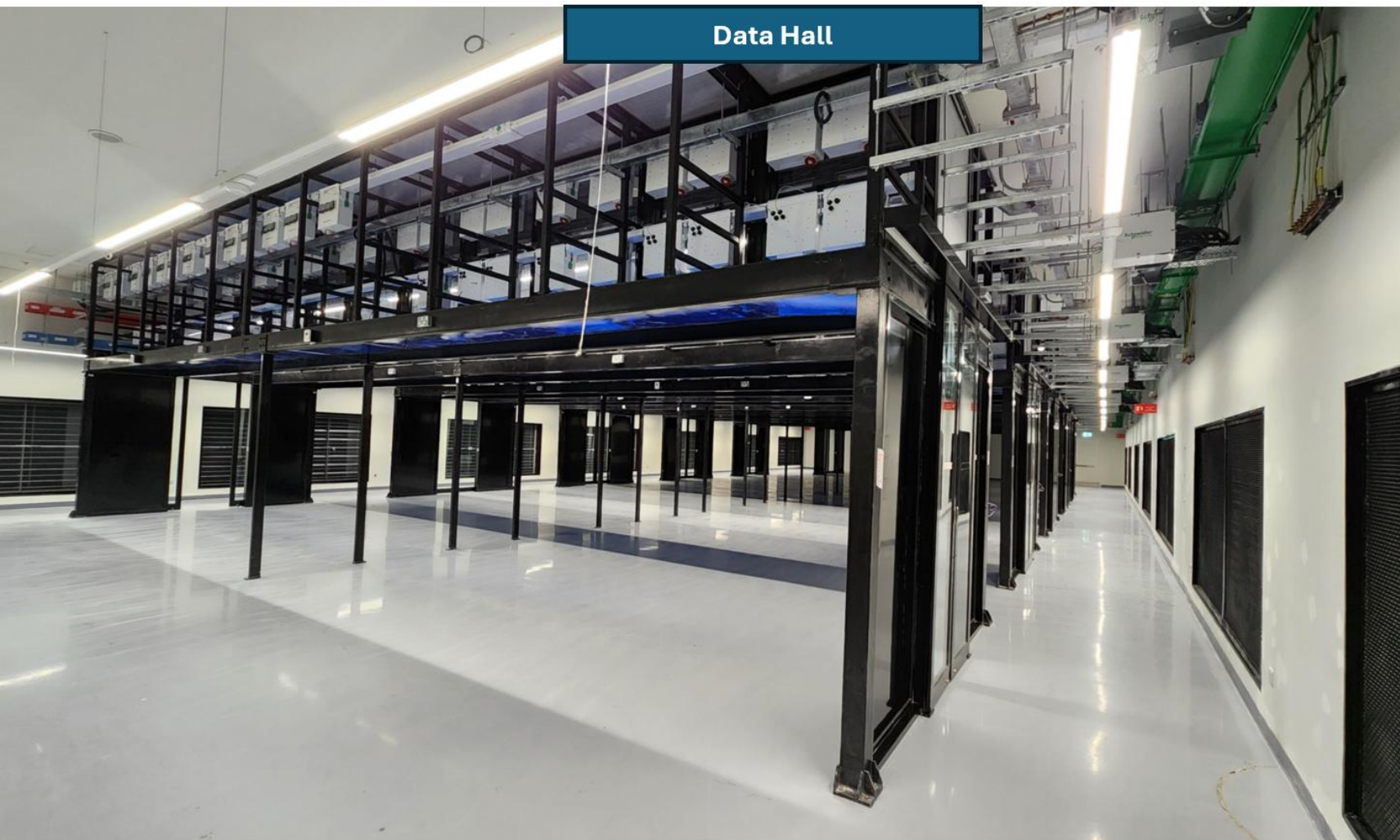
Data Hall

Prayer Room/Wudu Station

Main Entrance

SAHAYEB

Cx In-Progress

Hot Aisle Containment

Data Hall

Security/FOH

Loading Dock

MSFT Equipment/ Fitout Installation Started

Load Banks Ready for Power Testing

Data Hall 2 - WIP

Perimeter View

IDF Room
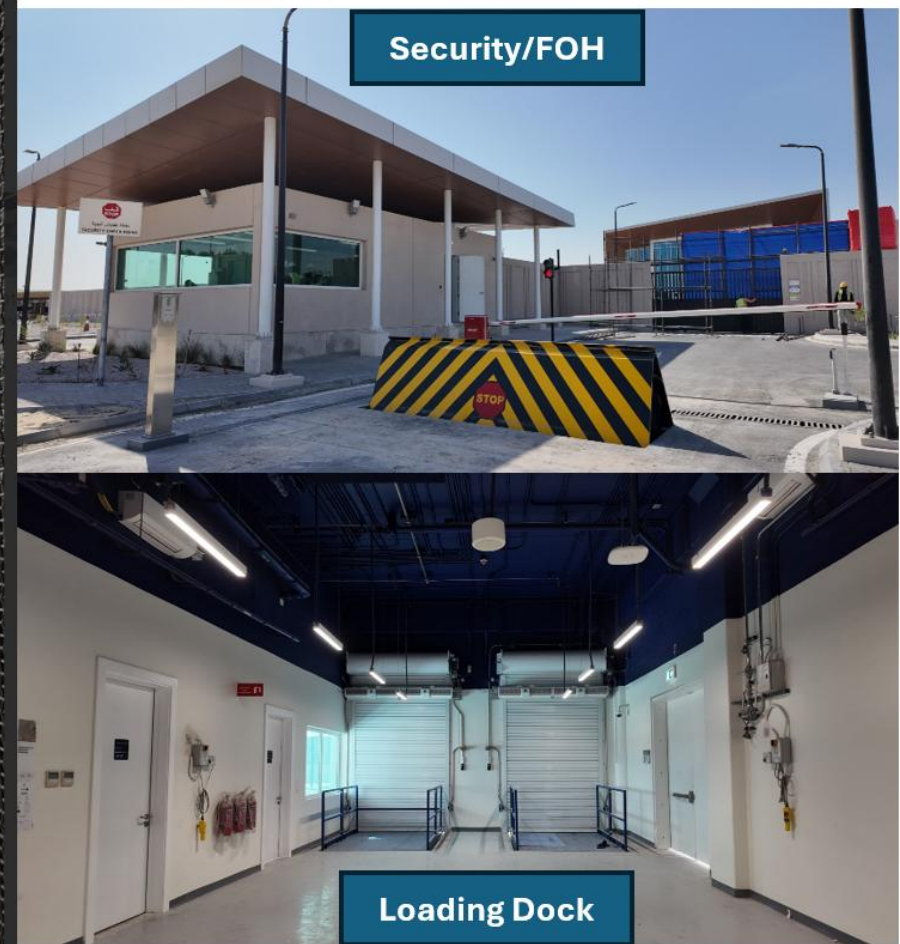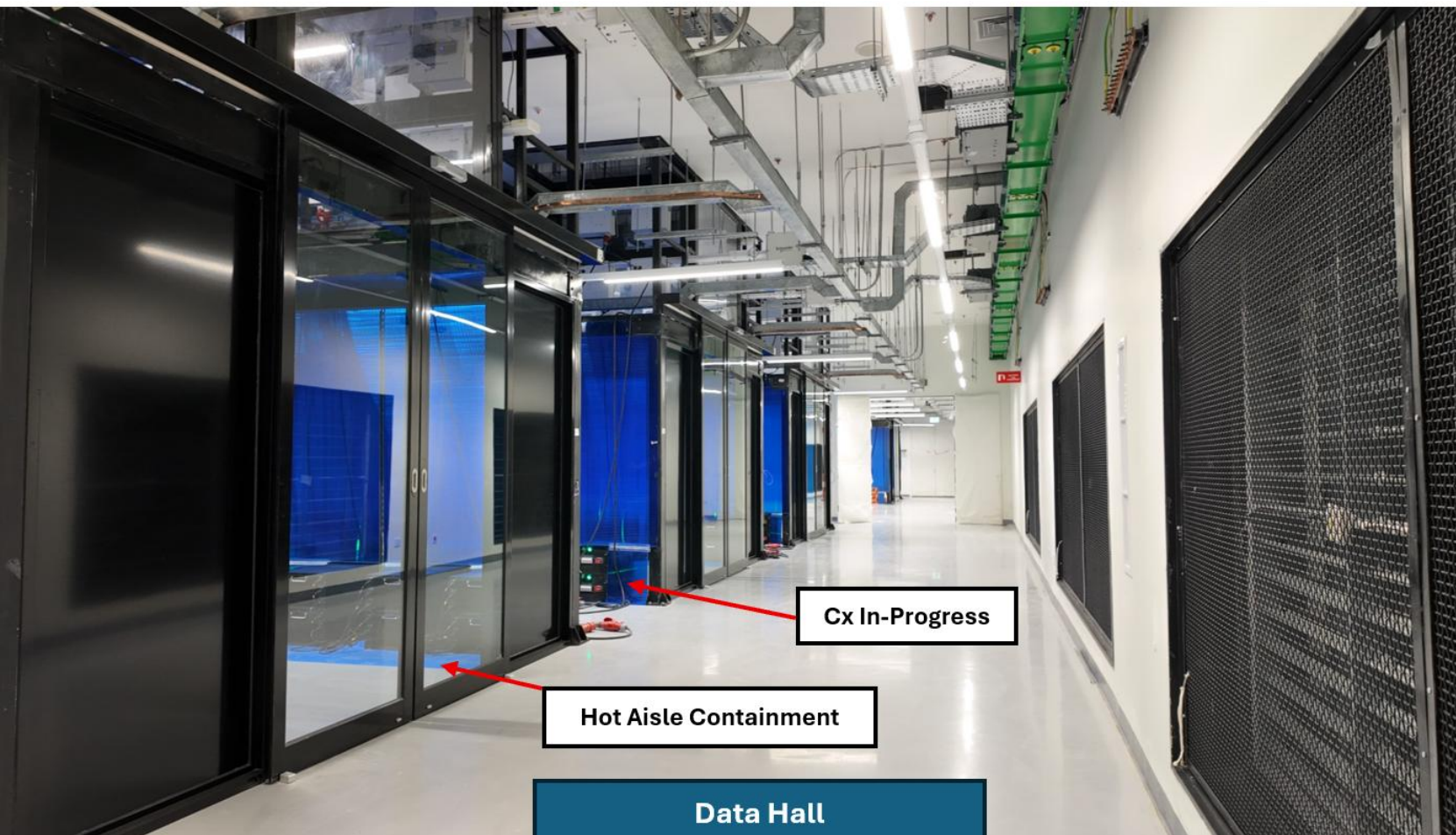
# STT Project Portfolio (FY25)
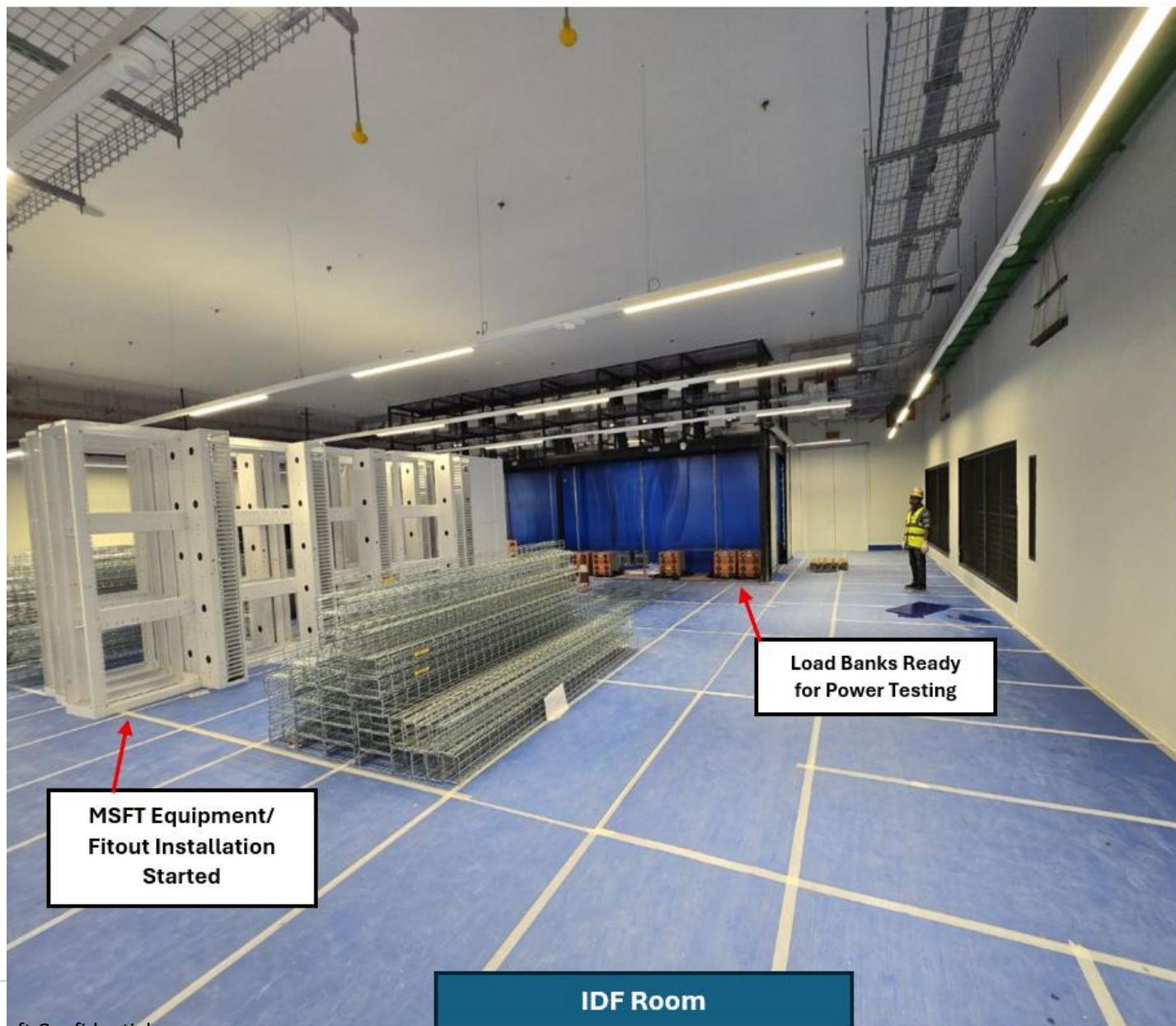
## Cooling

**Zonal Cooling -** Reducing energy use by cooling only what matters, enabling 9% more IT capacity and up to 10% better performance.

**Microfluidics -** Unlocking 20% more IT capacity with the most efficient chip cooling system ever built.

**Liquid Power & Cooled Chips -** Combining power and cooling delivery to streamline infrastructure and unlock greater datacenter capacity.

**Coolant Health -** Optimize the thresholds of critical PG25 properties to ensure protection of IT equipment and minimize required preventative maintenance.

## Sustainability

**Direct Air Capture –** Turning datacenters into low-cost carbon removal engines, powered by their own waste heat.

**LCA for AI –** Quantifying and reducing the environmental impact of every stage of AI datacenter operations.

**Nanoporous Evaporative Media –** Leading edge evaporative cooling media aimed at reducing supply water consumption by up to 30%.

**WHR (Waste Heate Reuse) –** Evaluate & catalog available technologies that repurpose DC waste heat to offset energy costs while satisfying regulatory needs and reducing $CO_2$ emissions.

## Power

**High-Temperature Superconductors (HTS) -** Replacing copper with ultra-efficient superconductors to cut costs, save space, and boost bandwidth.

**Prospero -** Evaluating 3rd party AI-based BAS solutions with the goal of reducing energy costs by ~10%.

## Networks

**Boat & Geoffrey –** Tripling cable deployment speed with a safer, hands-free installation tool.

**Optical AI –** Replacing cables with light to cut energy use by 10% and unlock faster AI models.

**Network Requirements –** Standardizing datacenter network requires to cut build time, reduce costs, and accelerate innovation.

## Automation & Physical Security

**HDD Disassembly –** Recovering rare materials to lower costs and enable a circular hardware supply chain.

**Coolant Testing Cart -** automate PG25 coolant test and sample collection process to reduce labor cost and improve data collection accuracy.

**Smart Chain of Custody –** Automating drive destruction to reduce costs and eliminate vendor-related security risks.

Others: Large CDUs, CDUless, OCP, Tech Advisory, Investment tech due diligence, _CFD/FNM Chip-Chiller modeling & Calibration_

# Saudi Arabia East – Projected Timeframe

*Microsoft announced its plans to establish a Microsoft public cloud region in Kingdom of Saudi Arabia – Saudi Arabia East. The development of a Microsoft public cloud region is a large-scale and complex infrastructure project that typically takes multiple years to complete. Although our project timeline is not yet finalized, Microsoft is willing to disclose, under NDA, that our estimated availability date for the Microsoft Saudi Arabia Region is **second semester calendar year 2026**.*

*These projected dates are our current estimates and may change given the dynamic nature of datacenter and networking infrastructure development and deep dependencies on external factors that could impact timelines (such as pandemic, epidemic, natural disaster, commercial restrictions, government mandates, labor shortages and actions, and supply chain issues). This statement is not intended to create any legally binding obligations on Microsoft and is intended only to facilitate further discussions regarding the Customer's ongoing business needs.*

# Energy and AI: How Microsoft engineering enables industry innovation on Azure

Sverre Brandsberg-Dahl
GM, Azure Core, Energy and Resources Industry
Microsoft

# Copilot stack

AI safety and security

Copilot extensibility

Microsoft Copilot | Your copilots

↑↓

AI orchestration and toolchain

Your data

Foundation models

AI infrastructure

Azure

Cloud and Edge

Copilot Studio

+

Visual Studio

+

GitHub
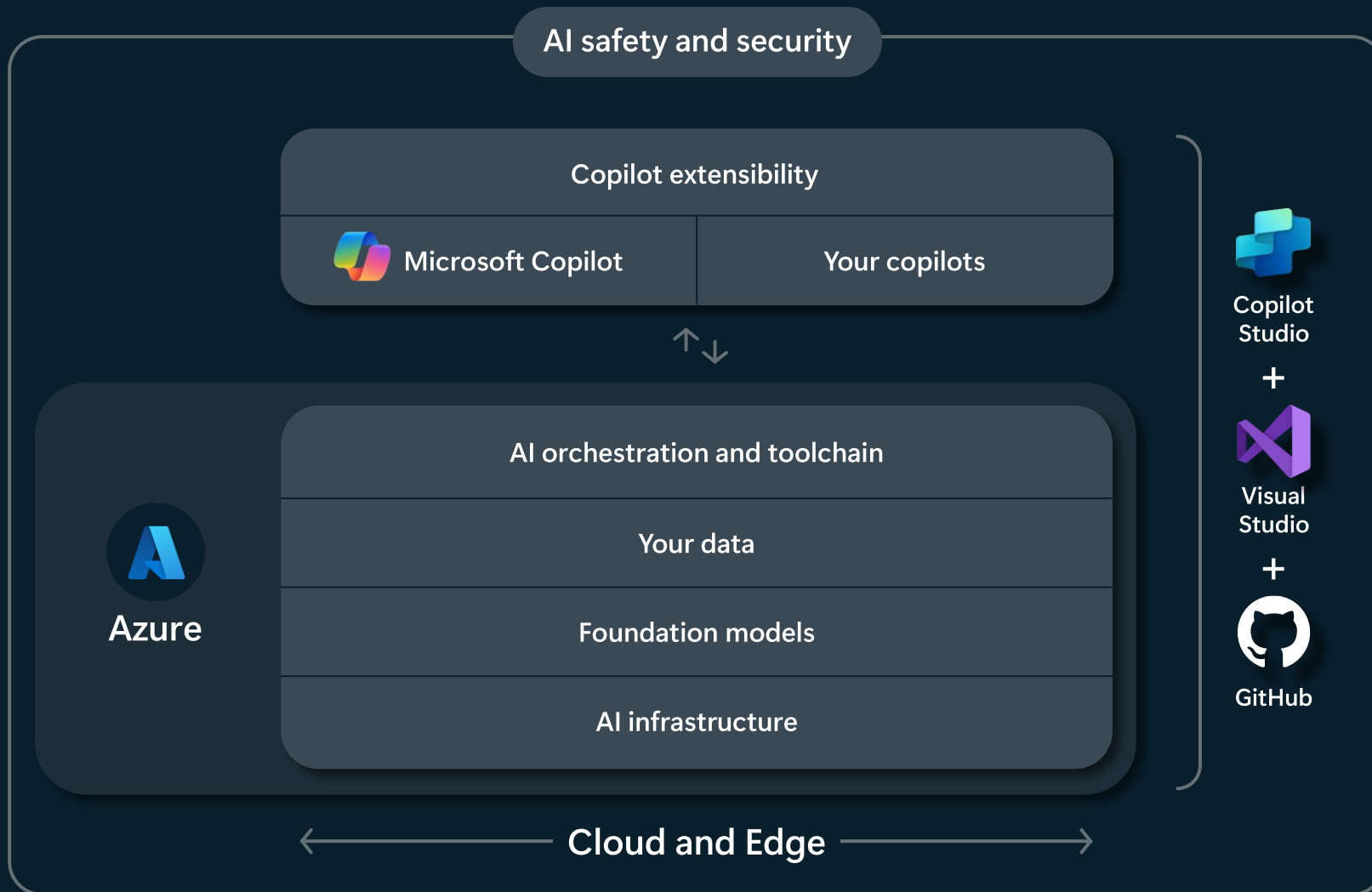
Power & Utilities

Industrial
Carbon Management

Oil & Gas

Northern
Lights

CO₂ Injection
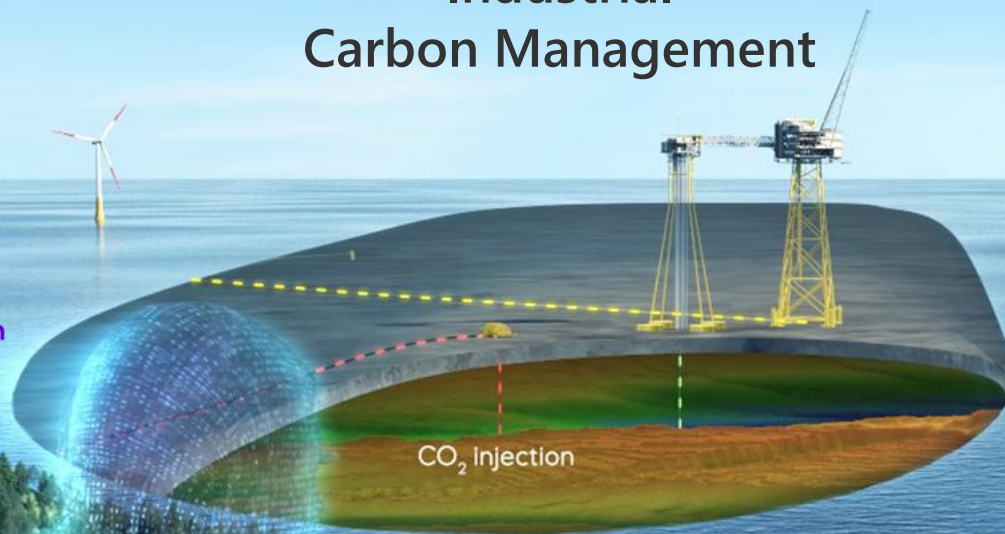
Mission:
to deliver a market-leading data foundation
for energy companies to unlock their siloed,
core domain data to the potential of AI and a
cloud-powered partner ecosystem.
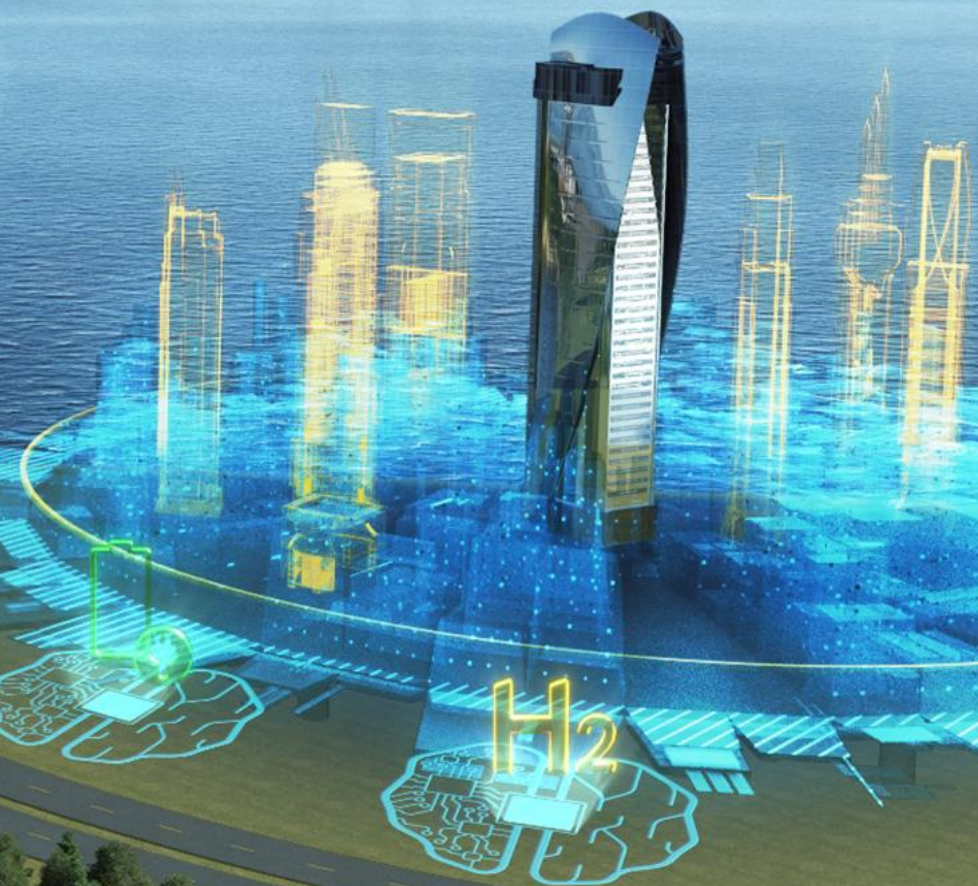
# Microsoft - Planned Energy Capabilities

## Building on Existing Investments Across Microsoft Cloud, Edge, and IoT

**Build industry-literate capabilities to support business transformation and energy transition in partnership with the global energy industry**

- Data foundation / system of record to track every unit of energy and its associated emissions
- Using industry data standards to unlock previously siloed data
- Support for end-to-end domain workloads: HPC, storage, etc.
- Extensibility and connectivity to deeply integrate with industry's ISV and SI ecosystem across Oil & Gas, Power & Utilities, Carbon and Renewables
- Connectivity for domain specific data across all Microsoft clouds
- Facilitate innovation and reduce development time: SDKs, scalability, lifecycle management, security, etc.

| Productivity | ⟷ | Domain | ⟷ | Data & AI |
|---|---|---|---|---|

**Solutions**
Deployed on Microsoft clouds, consumed by

| 1P Microsoft | SIs | ISVs |
|---|---|---|

**Microsoft Energy Capabilities**
Energy functions / Emissions and Multi-energy Orchestration

**slb**

| Oil&Gas | Carbon | Power&Utility |
|---|---|---|
| Upstream · Midstream | MMV · CCS · Hydrogen | DER · Match 24/7 |
| HPC, Optimization | Track, Audit, Token | Renewables Integration |

**Platform**
Cloud deployment options

| CLOUD | EDGE | DEVICE |
|---|---|---|

**AZURE**

Security / AI / ML

# Our Proven Industry Development Model
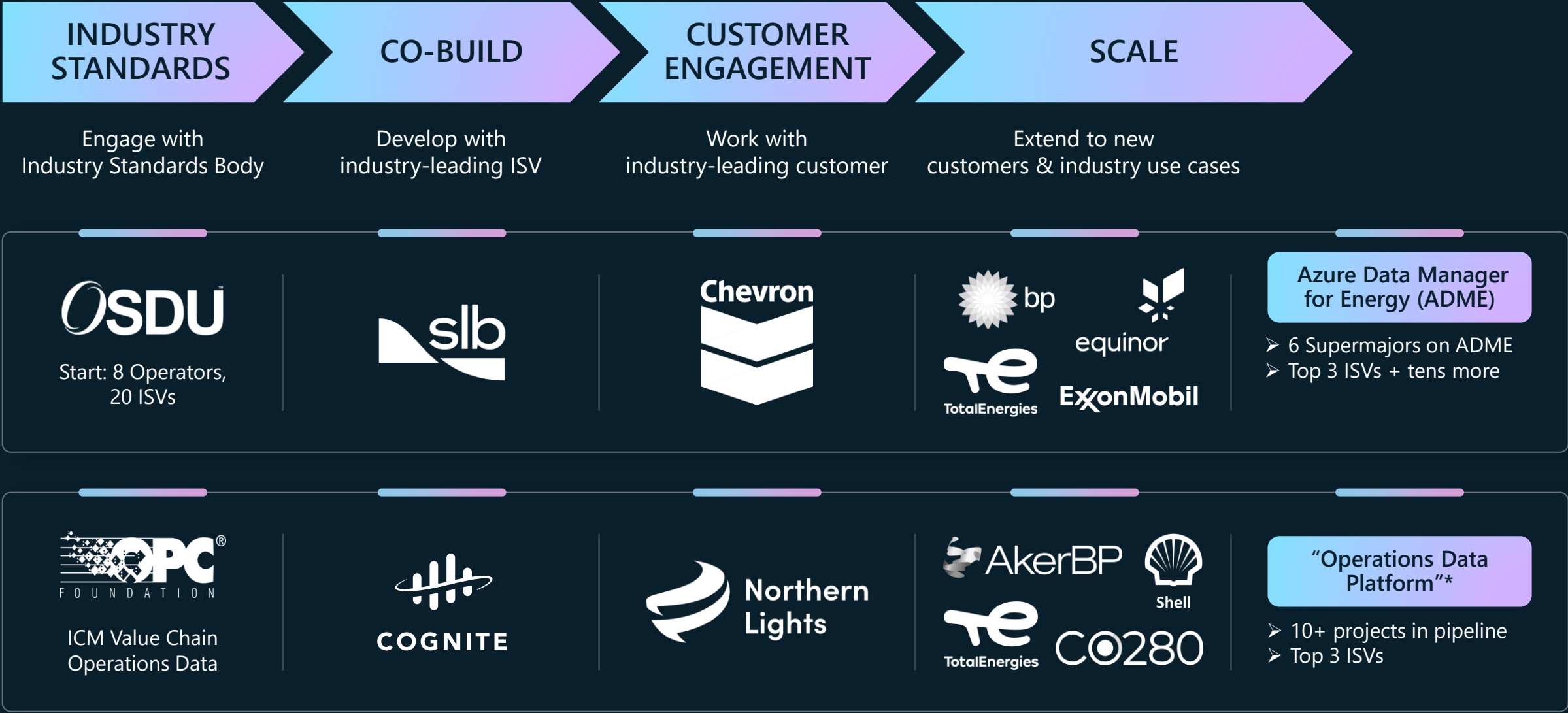
# Empowering ISV ecosystem and unlocking customer value

**Customer Value**

**AI & Copilots**   Microsoft Copilot   Azure Foundry   AI Patterns

## Partner Solutions

| slb | HALLIBURTON | aspentech | accenture |
| COGNITE | AKER CARBON CAPTURE | KONGSBERG | sopra steria |

## Microsoft Products & Services

| Microsoft Fabric | Microsoft 365 | Microsoft Purview | Environmental Credit Service |
| Microsoft Teams | Power Platform | Dynamics 365 | GitHub |

## "Industry literate cloud offering"

**Azure Data Manager for Energy (ADME)**

OSDU

← **Integration** →

**"Operations Data Platform"**

OneLake

**Open Data & API Standards | Telemetry | Lineage**

**Azure Cloud – hyperscale to edge**

# Carbon crediting projects

**Orsted**

**3.67 MT**

**stockholm exergi**

**3.33 MT**

**TIG** Timberland Investment Group

**8 MT**

......and many more

**Evaluating opportunities:**

- Biomass sourcing principles

- Net impact on emissions from the energy sector

- Carbon capture specifics

- Geologic sequestration options

# Digital MRV at scale
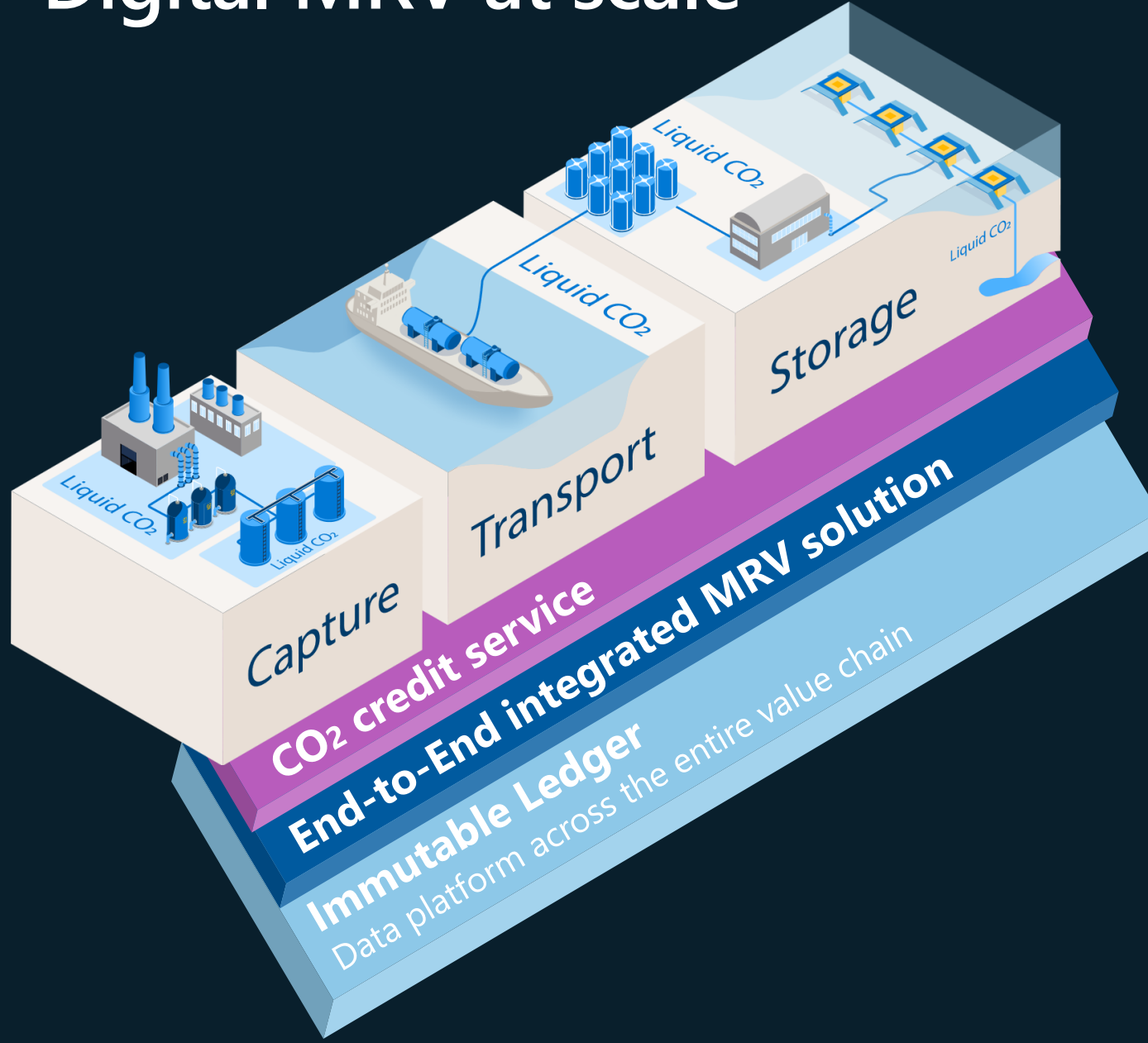


Requirements for digital MRV at scale:

- Global vendors
- Regulatory compliance "savvines"
- Security
- Integration with carbon markets
- Future proofing through open standards

# Industrial AI

Matt Kerner
CVP, CTO of Industry and Partners Solutions
Microsoft

# Industry growth strategy

**Accelerators**

**Co-built Partner Solutions**

**Industry Product**

Realize more value from the Microsoft Cloud with industry building blocks and platform solutions

Accelerate growth with partners

1P solutions with tailored GTM

Industry Clouds
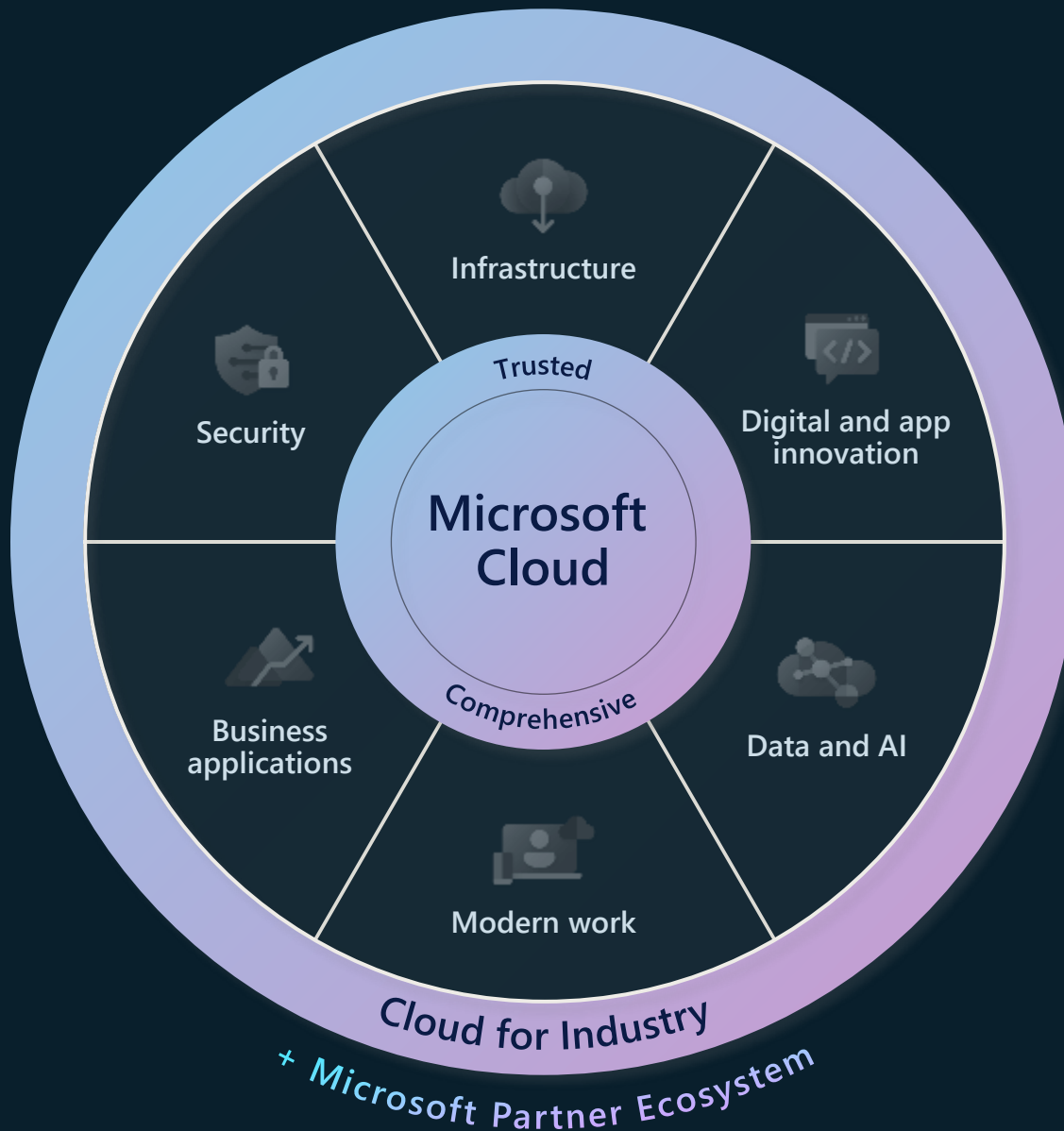
# Co-innovation & Co-engineering

Prioritized Industry Scenarios & Partners

Partner Co-innovation and Co-engineering work

Sharing and Scaling

Marketing

Sales/ Partner

Engineering

Regional and Account Leadership

Product Engineering

Joint Delivery

Product Engineering & Marketing

Minimum Viable Experiment (MVE)

Platform Architecture & Learnings

Minimal Viable Product (MVP)
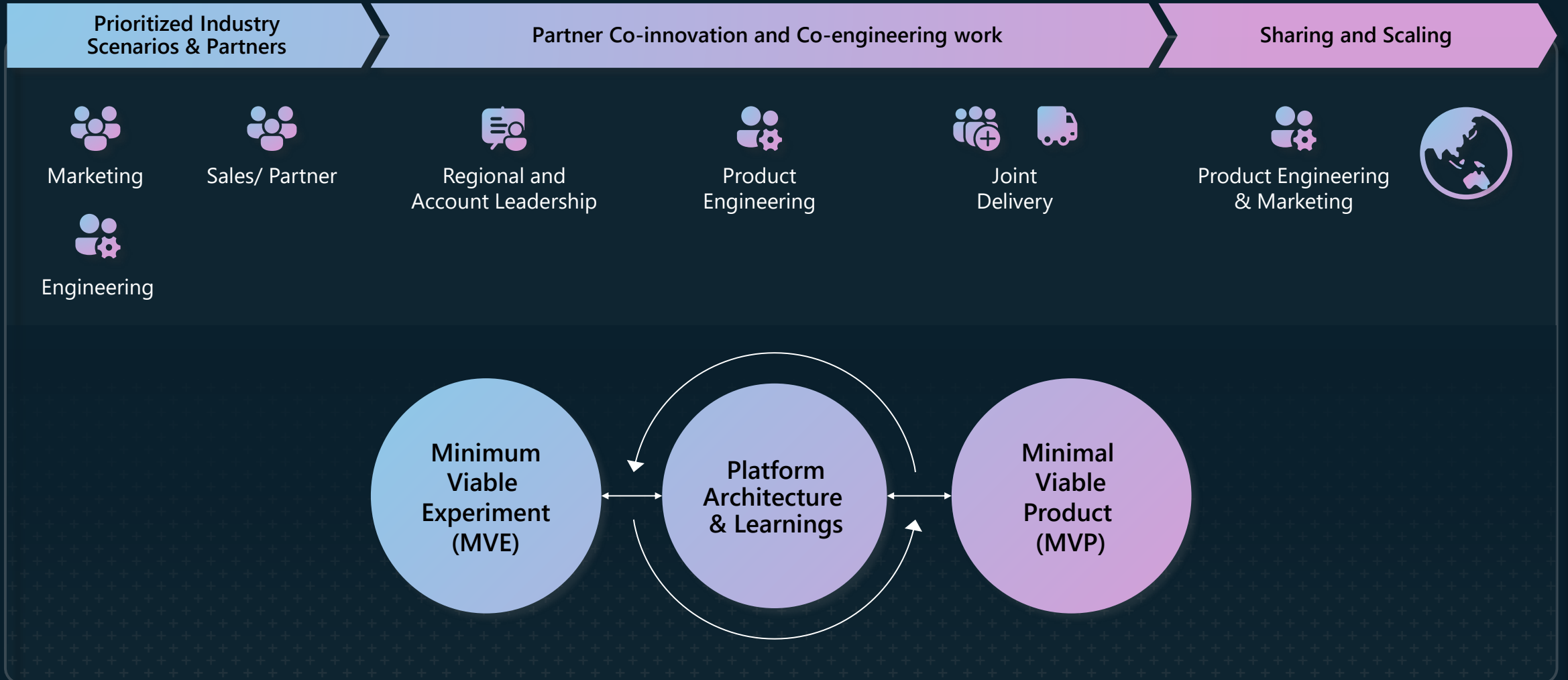
# Orchestrating our transformation to the frontier

Kathleen Hogan
EVP, Office of Strategy and Transformation
Microsoft

**Why** Empower every person and every organization on the planet to achieve more

**What** Ubiquitous computing • Ambient intelligence

Security • Quality • AI innovation

AI business solutions

Cloud & AI platforms

Cybersecurity

Professional social network

Gaming

Search, ads, & news

Devices & creativity

**How** Growth mindset → High performance

**10 things**
we've learned
about culture

1. Honor your past; define your future
2. Net it out: Simple yet strategic
3. You can't fake it
4. Have a purpose-driven mission
5. Make symbolic changes big and small
6. Make it who you are
7. Communicate, communicate, communicate
8. Let technology accelerate the change
9. All oars in the water
10. Stay humble, stay the course

# THE FRONTIER FIRM

Frontier Firm is an organizational model that combines the power of AI with human leadership and ingenuity to drive value creation.

# Goals for AI transformation
## BECOMING A FRONTIER FIRM

**1**

Empower every employee to reach their potential for impact and joy

**2**

Optimize core functions for efficiency, flexibility, speed, and experience

**3**

Accelerate competitive advantage

Persona Based Acceleration

Workflow Optimization

AI First Incubator

# Workstreams to drive AI transformation

**CEO**
Establish vision and principles

**AI-TRANSFORMATION OFFICE**
Define, orchestrate, and support journey

↓

## Priorities for transformation

**1**
Drive internal
product adoption

**2**
Ensure worldclass
functions for Microsoft

**3**
Build competitive
advantage

↑   ↑   ↑   ↑   ↑

## Enablers of transformation

**4**
Transformation
principles & ethics

**5**
Performance
management &
resource allocation

**6**
People
(skills & incentives)
and culture

**7**
"IT" & housing
reusable code

**8**
Internal
communications
& symbolic change

# Getting started

**Set CEO-level AI priorities**

Define ambition, and what success looks like with metrics

**Lead from the business**

Embed business leaders at the front, rather than IT

**Get enterprise AI-Ready**

Build data + infra backbone

**Follow core recipes**

Recognize the change management and process excellence required

**Engage and inspire**

Cascade CEO message that is both 'real' and inspiring

**Hold Leaders accountable**

# 5 QUESTIONS
## to ask your leaders

1. What are your vision and goals for how AI will impact your function?

2. What does this mean for your people?

3. How are you measuring impact?

4. Which workflows matter most?

5. How will you truly disrupt?