

Case Study:

Enterprise Data Platform & Governed AI Enablement for Regulated Utilities

Executive Business Context

Large regulated utility enterprises operate in an environment where reliability, regulatory compliance, cost control, and transparency are as critical as innovation.

To compete and operate efficiently, utilities must transition from fragmented, manual reporting environments to enterprise-grade, governed data platforms that can scale analytics, automation and AI, while maintaining auditability, security, and regulatory trust.

This engagement focused on establishing such a foundation to enable enterprise-wide insights, productivity gains, and responsible AI adoption.

Business Challenges

The utility faced several structural challenges common across the industry:

- **Fragmented Data Landscape:** Critical data spanning rate cases, budgeting, workforce, field operations, and trading resided across siloed systems with inconsistent definitions.
- **Manual, Labor-Intensive Processes:** Data extraction, reconciliation, and reporting relied heavily on spreadsheets, emails, and point-in-time queries, creating delays and operational risk.
- **Limited Decision Velocity:** Leadership lacked timely, unified views of financials, workforce trends, and operational performance, slowing planning and regulatory response cycles.
- **AI Adoption Risk:** While interest in AI and Copilot-driven productivity was high, the absence of governed data, lineage, and controls posed compliance and trust concerns.

AI-Enabled Solution Overview

A modern, enterprise-grade data and AI platform was designed to support analytics, automation, and AI at scale within a regulated utility environment.

Key solution elements included:

- **Cloud-Native Data Foundation (Azure Data Platform / Azure AI Foundry):** A scalable Azure-based data foundation enabling secure enterprise data ingestion, processing, and consumption, while supporting AI/ML use cases and governed, enterprise-wide analytics.
- **Modern Analytics Layer:** Microsoft Fabric and Databricks used to standardize pipelines, data models, and reporting across business domains.
- **Embedded AI & Copilot Enablement:** AI-assisted analytics, forecasting, and productivity capabilities deployed within enterprise security and governance boundaries.
- **Workflow Automation:** Power Platform-based automation replaced email-driven request handling and approvals with structured, auditable workflows.
- **Governance-by-Design:** Data quality frameworks, access controls, lineage, and auditability embedded into the architecture to ensure regulatory readiness.



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Value-Centered Capabilities

The Enterprise Data and AI platform provided a unified, production-grade framework to design, deploy, and operate AI-powered analytics, Copilot-style experiences, and future agentic workflows, without compromising auditability or trust; aligned to utility business priorities:

- **Unified AI Access & Integration:** Azure AI Foundry's unified SDK and APIs enabled secure access to a broad ecosystem of enterprise-ready models (including Microsoft and OpenAI models), simplifying integration across analytics, reporting, and AI-assisted decision support use cases.
- **Custom AI Models & RAG Patterns:** The platform supported fine-tuning and retrieval-augmented generation (RAG), allowing AI models to operate strictly within governed enterprise datasets, ensuring outputs were accurate, explainable, and aligned with regulatory expectations.
- **Multi-Agent & Workflow Orchestration (Future-Ready):** Foundry's agent orchestration capabilities established a foundation for deterministic, human-in-the-loop AI workflows, enabling future automation scenarios such as intelligent request triage, exception analysis, and decision support while maintaining clear approval and escalation paths.
- **Enterprise-Grade Security & Compliance:** Built-in safeguards, including content filtering, encryption, identity-based access controls, and policy enforcement, ensured AI usage aligned with enterprise security standards and regulatory requirements.
- **Flexible & Controlled Deployment:** AI workloads were designed to run securely across Azure environments with network isolation and identity controls, supporting both centralized governance and scalable enterprise consumption.

Quantified Business Value

The transformation delivered measurable value across operations and decision-making:

- Accelerated AI adoption without increasing compliance risk
- Ensured full traceability from source data → AI output → decision
- Enabled scalable Copilot and future agentic AI use cases
- Strengthened regulatory confidence through built-in controls

Strategic Impact

This initiative established more than a technical platform, it created a future-ready operating model for data and AI in a regulated utility.

Strategic outcomes include:

- **AI-Ready Utility Enterprise:** A governed foundation that enables responsible scaling of advanced analytics, Copilot use cases, and future agentic AI.
- **Regulatory Confidence:** End-to-end traceability and controls that support audits, rate cases, and compliance reviews.
- **Enterprise Agility:** Faster response to regulatory requests, market changes, and operational demands.
- **Sustainable Digital Transformation:** A reusable architecture and governance model that supports long-term modernization initiatives.