A Larsen & Toubro Group Company

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Unlocking AI in Energy & Utilities

Bouquet of 90+ Success stories powered by AI - ML - GenAI - Agentic AI

LTM

Enterprise Solutions
Powered by BlueVerse & Custom AI Platforms

Domain Meets AI
Energizing Efficiencies, Powering Possibilities

Innovation
AI Assisted Coding Solutions

Agentic AI
Enabling Multi-Agent Solutions

Reimagine Experience
Through Data, Design, and AI

Core AIOps
Operational Excellence

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LTM
LOREM IPSUM
INFOGRAPHIC
Enterprise Solutions
Powered by BlueVerse™
and Custom AI Platforms

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OVERVIEW

This section showcases enterprise-wide AI transformation programs where GenAI, Agentic AI, and LTM BlueVerse platforms were deployed to modernize legal, IT, compliance, analytics, and business decision-making functions. These initiatives focus on productivity improvement, workflow automation, enterprise search, knowledge intelligence, compliance automation, and application modernization.

USE CASE Click on any of the below stories to explore the details.

1 Scale Enterprise AI with BlueVerse

2 Modernizing Power Generation at Scale

3 Transforming IT Support Experience

4 Optimizing Outcomes with Enterprise AI

5 Capability and AI-Driven Rationalization Architecture

6 Learning Intelligence & Decision Support Platform

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American Energy Company

Scale Enterprise AI with LTM BlueVerse™

Full-Scale Gen Ai Platform Deployment Delivering Agentic Ai Solutions Transforming Legal And it Operations

Challenges

- Fragmented, manual processes slow down operations and increase risk.
- Overloaded subject matter experts (SMEs) and compliance challenges.
- Legal teams face delays and complexity in interrogatory reviews.
- Existing tools lack automation and scalability for future growth.

Our Solution

- Deployed BlueVerse™ in the customer's Azure environment.
- Integrated BlueVerse™ live with internal business units to support day-to-day operations.
- Redesigned workflows into an integrated, AI-first operating model.
- Implemented custom LLMs with conversational memory for stronger contextual understanding.
- Automated high-volume IT support tasks & connected them to ServiceNow AgentNow, SharePoint, enterprise knowledge sources.

Tech Stack

BlueVerse platform on Azure | Snowflake Utility for automated deployment | Agentic AI solutions integrated enterprise systems

Outcome Delivered

60% Boost in persona productivity efficiency

80% Reduction in response cycle time

40% Improvement in data accuracy

Improved accuracy, defensibility, and regulatory compliance faster filings and smoother multi-team coordination

Established foundation for scalable automation

Strategic AI roadmap co-developed for workflow intelligence

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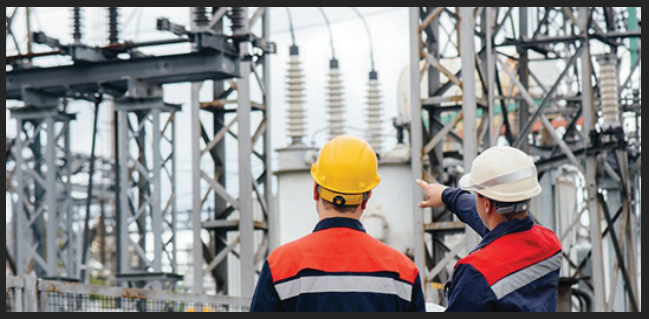
US-Based Fortune 500 Company

Modernizing Power Generation at Scale

Improving Efficiencies with Predictive Analytics and Automation



Challenges

- Legacy systems with data latency and limited scalability.
- Need for real-time, actionable insights and user-friendly explanations.
- Ensuring robust security while integrating with existing infrastructure.
- Enhancing forecasting accuracy and empowering field teams.
- Aligning with sustainability and regulatory goals.

Our Solution

- Designed and implemented next-gen, cloud-based enterprise AI platform.
- Leveraged advanced predictive analytics and GPT-based contextual narratives for operational insights.
- Ensured seamless integration with legacy systems, retaining robust security protocols.
- Adopted a user-centric design with iterative feedback & phased rollout.

Tech Stack

Frontend: ReactJS | **Backend:** Python, Azure OpenAI (LLM & Embedding models) AI Search (vector indexing/querying), Function App, Web App, Document Intelligence, Azure Speech Services | **Storage:** Azure Storage Accounts, SQL Server Azure Fabric, Cosmos DB | **DevOps:** Azure DevOps, Azure Repos, Azure Pipelines

Outcome Delivered

$1Mn
in potential annual savings during proof-of-concept

15%
Improvement in resource allocation

25%
Cut in data processing time

20%
Reduction in forecasting errors

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Leading American Power Generation Provider

Askit-Transforming IT Support Experience

BlueVerse Foundry-powered agentic AI solution enabling self-service IT support, accelerating issue resolution, and transforming employee experience

Challenges

- Employees relied on multiple systems to access information and resolve routine IT issues.
- High volumes of repetitive support requests increased operational burden on IT teams.
- Fragmented knowledge sources resulted in inconsistent user experiences and slower resolution cycles.
- Limited self-service capabilities created continued dependency on manual support channels.

Our Solution

- Developed AskIT, a BlueVerse Foundry-powered agentic AI assistant for enterprise IT support.
- Unified knowledge articles, service catalogs, incident records, and IT documentation into a single AI-powered experience.
- Leveraged conversational AI, RAG, and workflow orchestration to deliver context-aware support and guided resolution.
- Enabled self-service troubleshooting, request management, incident tracking, and continuous learning through user interactions.

Tech Stack

Blueverse Foundry, Azure Open AI, RegIQ, GitHub, Chat Interface (Web / Domnet Widget)

Outcome Delivered

Enhanced employee self-service experience

35% Reduction in repetitive IT support requests

50% Faster issue resolution and response time improved

Simplified ticket creation journey

Improved utilization of enterprise knowledge

Real-time responses

Increased overall employee productivity

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Super Major Oil and Gas Company

cAIra - Capability and AI-Driven Rationalization Architecture

AI-driven early warning intelligence enables proactive maintenance, improves asset reliability, and reduces production losses

Challenges

- Fragmented application landscape created operational complexity and duplicate technology investments.
- Overlapping applications increased maintenance costs and inefficient resource allocation.
- Manual portfolio assessments made rationalization efforts slow, subjective, and difficult to scale.
- Limited visibility into dependencies, business value, and modernization readiness hindered decision-making.

Our Solution

- Developed PRISM, an AI-powered framework for enterprise-scale application portfolio assessment and modernization.
- Leveraged AI/ML and ServiceNow CMDB data to analyze application dependencies, usage patterns, and operational health.
- Used GitHub Copilot agents to perform code-level analysis and generate application intelligence.
- Automated capability mapping, portfolio assessments, and modernization recommendations.
- Enabled data-driven decisions for retention, modernization, consolidation, migration, and decommissioning initiatives.

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Tech Stack

PRISM Framework | GitHub Copilot Agents | ServiceNow CMDB | Azure DevOps | AI/ML Portfolio Analytics | Application Discovery Intelligence | Enterprise Modernization Accelerators

Outcome Delivered

Estimated annual savings exceeding $8 Mn through application rationalization, vendor consolidation, platform standardization, and accelerated cloud modernization.

Automated portfolio intelligence, significantly reducing manual assessment effort while improving decision quality and consistency.

Improved modernization planning through comprehensive visibility into application capabilities, dependencies, and technical health.

Enabled data-driven portfolio decisions using nine strategic evaluation dimensions aligned with enterprise modernization objectives.

Enhanced cost transparency by providing detailed insights into total cost of ownership, optimization opportunities, and modernization ROI.

Accelerated application consolidation initiatives, helping reduce technology sprawl and eliminate duplicate business capabilities.

Established an enterprise-scale modernization framework approved and validated for strategic transformation programs within a complex global energy environment.

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Global Integrated Energy Company

GenAI-Powered Learning Intelligence & Decision Support Platform

Transforming enterprise learning data into actionable business intelligence, enabling faster decisions across upstream operations

Challenges

- Critical lessons learned and business-impact assessments were scattered across thousands of records.
- Existing systems provided information access but lacked contextual, decision-ready insights.
- Engineers and analysts spent considerable effort correlating data across multiple sources.
- Fragmented insights limited holistic decision-making across operational domains.

Our Solution

- Developed a GenAI-powered Learning Intelligence Platform to synthesize enterprise learning and business-impact data.
- Enabled natural language interaction with structured and unstructured knowledge repositories.
- Built an intelligent reasoning layer to generate actionable recommendations from lessons learned and operational outcomes.
- Leveraged Prompt Flow to deliver contextual, domain-aware responses beyond traditional search.
- Established a scalable, secure knowledge accelerator for operations, engineering, compliance, and workforce programs.

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Tech Stack

Azure OpenAI | Prompt Flow | Enterprise GenAI Platform | Conversational AI | Knowledge Intelligence Framework | CI/CD Automation | GitHub Actions | Terraform | Cloud-Native Architecture

Outcome Delivered

Improved decision velocity by 30-35%, enabling faster issue resolution and accelerated learning adoption across operational teams.

Reduced manual analysis effort by 250-300 hours per month, eliminating time spent consolidating and correlating information from multiple knowledge sources.

Saved approximately 1.5-2 FTEs of effort, reducing dependency on SMEs for routine knowledge discovery and interpretation

Enhanced knowledge accessibility and reuse, accelerating onboarding, workforce development, and organizational learning.

Enabled multidimensional insight generation, providing contextual recommendations across cost, safety, quality, schedule, environmental, and operational performance dimensions.

Improved planning accuracy and decision quality through real-time access to enterprise knowledge and historical lessons learned.

Created a reusable GenAI accelerator, establishing a scalable foundation for future AI-powered learning and decision intelligence initiatives.

Strengthened enterprise GenAI adoption, demonstrating an enterprise-grade approach to knowledge synthesis, reasoning, and operational decision support.

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Major US Utility Enterprise

Optimizing Outcomes with Enterprise AI

A power generation leader's journey to enhanced efficiency, accuracy, and innovation

Challenges

- Challenges in extracting actionable insights from both structured and unstructured data sources (e.g., contracts, legal documents).
- Manual workflows led to increased effort, slower decision-making, and a higher risk of errors.
- Difficulty in ensuring enterprise-grade security, compliance, and seamless integration across business functions.

Our Solution

- Developed AskCal, an Azure-based AI intelligence framework, to automate workflows and improve decision-making using generative AI and advanced analytics.
- Enabled actionable insights and reporting by processing structured data and generating business-ready outputs.
- Implemented document intelligence to extract, categorize, and analyze multiple file formats, including contracts & legal documents.
- Automated compliance monitoring, fraud detection, and governance to strengthen regulatory adherence.
- Delivered enterprise-scale reliability, security, and governance with seamless integration across business functions.

Tech Stack

Cloud Platform: Microsoft Azure
Gen AI Ecosystem: Advanced generative AI for operational efficiency and smarter decision-making
Data Insights & Analytics: Processes structured data from Accord for actionable insights and reporting

Outcome Delivered

20% Reduced forecasting errors	15% Improved resource allocation
95% Cut data processing time	95% Minimized security vulnerabilities

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LTM
Innovation
AI-Assisted Coding Solutions

LTM

OVERVIEW

The Innovation segment demonstrates how AI is transforming software engineering, modernization, testing, document processing, quality inspection, and enterprise operations. The stories focus how teams have leveraged GitHub Copilot, GenAI, Computer Vision, OCR, Document AI & AI-assisted SDLC accelerators to improve developer productivity, reduce manual effort, improve ops efficiency and accelerate modernization.

USE CASE Click on any of the below stories to explore the details.

1 Modernizing Legacy System at Scale

2 Digitizing Shipment Documents

3 Modernizing Enterprise Tax Systems

4 Engineering Intelligent Software Quality

5 Visual Inspection: Faster, Smarter Checks

6 AI Mapping & Tagging: Accuracy @ Scale

7 Modernizing ERP AMS

8 Driving Paperless Billing Adoption

9 Digitizing Maintenance Instructions

10 IT Operations Transformation

11 SDLC Acceleration - GHCP Agent Skills

12 AI-Powered STTM Mapping Generation

13 Accelerating Data Product Delivery

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Super Major Oil and Gas Company

Modernizing Legacy System at Scale

AI-assisted software development life cycle using GitHub CoPilot

Challenges

- High dependency on legacy SMEs for business logic extraction.
- Complex, monolithic architectures, and a lack of standardization.
- Manual, repetitive development, and deployment tasks.
- Inconsistent code quality and lengthy manual testing cycles.
- Manual deployments and environments not in sync.

Our Solution

- Reimagined and migrated legacy applications to Azure PaaS, decoupling monoliths, and enabling scalability.
- Automated business logic extraction, code generation, and unit test creation with AI tools.
- Streamlined CI/CD pipeline design and DevOps setup with intelligent automation.
- Seamless integration with modern frameworks.

Tech Stack

GitHub Copilot (Gen AI–powered development) | Azure PaaS (cloud-native migration) | NET Core, Angular (modern frameworks) | Azure DevOps, Ansible (CI/CD) Automation

Outcome Delivered

15%
Improvement in productivity during assessment & design

35%
Reduction in lead time for business logic extraction

45%
Faster CI/CD pipeline design cycles

30%
Increase in code generation throughput (NET and Angular)

40%
Reduction in unit testing effort

20%
Reduction in bugs post-modernization & improved application stability

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LTM

Major Oil and Gas company

Digitizing Shipment Documents

AI-powered automation cuts retrieval time by 99% while reducing costs by 85%.

Challenges

- Large volumes of physical shipment documents require digitization.
- Slow, manual document retrieval from paper archives & data stores.
- Response times exceeding 24 hours were impacting customer service.
- High operational costs tied to document management.

Our Solution

- Digitized shipment documents using Document AI on GCP for fast and low-cost access.
- Parsed and uploaded PDFs via advanced data modelling.
- Extracted key attributes into BigQuery.
- Visualized insights using Looker Studio.
- Enabled multi-year archival and retrieval at minimal cost.

Tech Stack

Document AI on Google Cloud Platform (GCP) | Advanced data modelling for PDF processing | BigQuery data warehouse for attribute storage | Looker Studio dashboard for visualization

Outcome Delivered

99% Cut document retrieval TAT

Eliminated manual paper handling

Enabled visual dashboards for stored data and documents

100% Digitization of shipment documents

85% Cost reduction and automated search

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Super Major Oil and Gas Company

Modernizing Enterprise Tax Systems

AI-driven automation and code refactoring for faster compliance and cost efficiency

Challenges

- Undocumented code and lack of business SME knowledge.
- Stringent compliance and reporting requirements (federal & state).
- Tightly coupled, complex architecture.
- Manual, time-consuming data validation and migration.

Our Solution

- Decoded business logic & transitioned codebase from PL/SQL to T-SQL.
- Developed ADF pipelines for automated data ingestion and tax calculation.
- Deployed GenAI for refactoring 47K+ lines of code and automated validation of 18M+ records.
- Automated month-end activities and enabled efficient tax calculation.
- Established a future-ready, Azure-based platform for ongoing modernization.

Tech Stack

Azure Cloud | Python (for data validation and automation) | ADF (Azure Data Factory) pipelines | GenAI for code refactoring and automation | GitHub Copilot for engineering productivity

Outcome Delivered

65% Reduction in development time

73% Integration testing effort saved

100% Software quality achieved

~$14K Business cost saving

2,000+ Hours of business testing effort saved and ZERO defects post go-live

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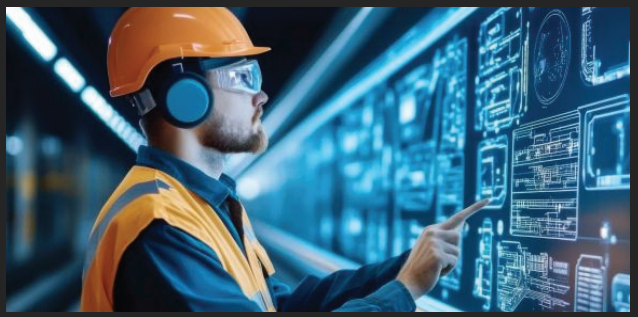
Global Energy Services

Engineering Software Quality with AI-Powered Intelligence

Automated testing prevented 99% UAT defects and reduced support tickets by 40%



Challenges

- Fragmented, reactive, and siloed quality engineering processes.
- Lack of a centralized repository for reusable quality artifacts.
- Limited real-time visibility into software health and KPIs.
- Ad hoc automation with low ROI and inconsistent standards.
- Late-stage quality checks leading to delayed defect detection and increased rework.

Our Solution

- Established a Testing Center of Excellence (TCoE) built on governance, process optimization, agile alignment, tooling, and workforce development.
- Implemented KPI-driven dashboards, standardized test management processes.
- Aligned testing with agile methodologies and adopted a shift-left approach for early quality embedding.
- Leveraged AI-powered automation (UFTone, Tosca) for self-healing scripts, natural language test authoring, & synthetic data generation.

Tech Stack

Azure DevOps (ADO) for test management and automation pipelines | UFTOne and Tosca for intelligent test automation | SNOW for centralized KM | Power BI for real-time QA dashboards | Jira for standardized test activity | AI/Gen AI for self-healing scripts, natural language test authoring & synthetic data generation

Outcome Delivered

Maintained **>99%** UAT defect prevention and improved delivery standards

Identified and resolved **5,000+** quality observations, minimizing downstream defects

Restored SAP access for **4,300+** users, preventing business disruption

Achieved **40%** drop in support tickets post go-live and 100% execution of BVT & ART for robust application stability

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Oil and Gas Company

AI Visual Inspection: Faster, Smarter Quality Checks

A 71% reduction in cycle time through automated defect detection enables consistent, scalable operations.

Challenges

- Subjective and inconsistent inspection processes.
- Lack of standardization in hardware, lighting, and operator expertise.
- No track record of defects or historical data.
- Need for flexible acceptance criteria based on job type.
- Requirement for advanced data storage and insights generation.

Our Solution

- Developed an AI-based solution capable of recognizing multiple types of weld defects.
- Implemented flexible acceptance criteria tailored to specific job types.
- Designed backend services for data storage and insights generation.
- Automated weld defect analysis and reporting, including 3D profiling.
- Delivered an end-to-end solution with advanced hardware, portal, and model development.

Tech Stack

Line Laser | Realsense 435i Depth Camera | Raspberry Pi 4b Microcontroller
Capacitive DSI Display | AI/ML models for defect detection & analysis

Outcome Delivered

Automated workflows and reduced reliance on manual labor

Standardized, reliable, and repeatable inspection results

Enhanced operational accessibility and scalability

71%
Reduction in inspection cycle time (from 14 hours to 4 hours)

18cm/min
Scanning speed for rapid quality checks

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Energy and Chemical Producer

AI Mapping and Tagging: Accuracy at Scale

Gen AI-powered image recognition with 95% data accuracy and enhanced operational scalability

Challenges

- Need for simplified and precise mapping to define flawless boundaries around process units and systems. Automation required to link instrument tags with respective entities. High data accuracy and significant noise reduction needed. Manual data validation processes were time-consuming and error-prone. Requirement for conversion to OCR format and significant processing power for training and execution.

Our Solution

- Implemented advanced AI-based image recognition for entity detection in process diagrams.
- Employed AI-based line detection to classify and trace connections between equipment and instruments.
- Developed an OCR solution accurate text extraction from diagrams.
- Established a clear hierarchy of instruments and equipment, ensuring accurate linkage of each tag.
- Automated data storage and processing using JSON, Azure, and Vision AI for scalable operations.

Tech Stack

Advanced AI-based image recognition | AI-based line detection techniques | Optical Character Recognition (OCR) powered by AI | Data storage in JSON format | Azure, Machine Learning, and Vision AI technologies

Outcome Delivered

50-70%
Reduction in manual work for P&ID tagging

95%
Accuracy in tag management, minimizing costly downtime, and misidentification

10X
Operational scalability without increasing headcount

30-40%
Reduction in maintenance and troubleshooting times

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Global Chemical Producer

Modernizing ERP AMS powered by LTM accelerators

Gen AI and Copilot-powered automation for efficiency, governance, and innovation

Challenges

- Inefficient Service Entry: Over 5,000 low-value service invoices per year are processed manually, as SAP VIM only automates materials invoices, leading to high manual effort & potential errors.
- Time-Consuming Inspection Report Grading: RBI assessments require grading ~1,000 reports per unit, taking over 10 minutes per report, straining resources.
- Cumbersome Publication Review: A six-level workflow across Tech, Business, Corporate Affairs, Legal (IP & Copyright), and VP approvals creates bottlenecks and extended cycle times.

Our Solution

- SmartAssist for SAP: Real-time ERP user assistance and accelerator by LTM SAP CoE; Gen AI-driven ticket creation, routing, and self-help to reduce frequent data-entry & authorization issues across ~5,000 users.
- Automated reading and validation of invoice and PO lines, reducing manual intervention.
- Enabled intelligent routing and exception handling to further streamline the process.

Tech Stack

SAP ecosystem + SmartAssist (GenAI tool) | SAP VIM with AI-assisted service entry processing | GitHub Copilot | Data lake & governance

Outcome Delivered

User productivity and self-service:
~30%
fewer frequent ERP issues; faster ticket creation and guided resolution via SmartAssist

Operational efficiency in inspections:
150+
hours saved per unit for RBI assessments through AI summarization

Finance throughput:
~10
minutes saved per service entry; lower overdue penalties and improved posting velocity

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Fortune 1000 Public Utility

Driving Paperless Billing Adoption with AI-Powered Precision

ML-driven targeting enabled 45K new enrollments and achieved 75% customer retention while cutting costs

Challenges

- Escalating costs from rising postage and material expenses for paper billing.
- Low adoption: Fewer than 50% of customers enrolled in paperless billing, leaving significant savings untapped.
- Need for precision targeting to identify customers most likely to adopt auto-enrollment.
- Retention imperative: Ensuring new enrollees stay committed for at least 12 months to maximize ROI.

Our Solution

- Propensity Modeling: Built an ML model with 100+ predictive features to identify customers likely to adopt paperless billing.
- Continuous Optimization: Automated monthly runs with real-time feedback to improve accuracy.
- Robust Training Data: Leveraged a cohort of ~25,000 long-term engaged customers for reliable predictions.
- Actionable Insights: Delivered curated customer lists for targeted email campaigns, refining with each cycle.

Tech Stack

AWS Claude and Kendra | Machine learning models

Outcome Delivered

>75%
Stickiness
Locks-in long-term savings with high retention

<1%
Bounce-back
Ensures precision with minimal campaign fallout

45,000
New Enrollments
Reduces paper usage

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Super Major Oil and Gas Company

Digitizing Maintenance Instructions with Azure AI

AI-powered automation saves 50% effort and accelerates conversion timeline from 12 months to 3 months

Challenges

- Conversion of maintenance instructions from unstructured documents into a mobile inspection digitized format.
- Highly unstructured and inconsistent maintenance instructions across PDFs, scans, and documents, varying by asset and plant.
- Heavy dependency on SMEs and technical writers to manually interpret and standardize instructions, creating bottlenecks.
- Lack of a standardized digital inspection schema, making mobile enablement and reuse across systems difficult.
- Frequent rework and long update cycles due to ambiguity, manual validation, and limited traceability of changes.

Our Solution

- Utilized Azure AI Assistance to generate Python from an unstructured document template.
- Needed prompt engineering to generate Python code that worked across changing input formats, while iteratively refining the output quality and consistency.
- Implemented Python using Azure Logic Apps with a User interface via SharePoint to upload documents &generate a final Excel output.

Tech Stack

Azure OpenAI | Python | Azure Logic Apps | SharePoint Online | Azure Blob Storage Azure Functions | Microsoft Graph

Outcome Delivered

50%
Effort saved in converting 800 Integrity Critical Maintenance Work Instructions (ICMWI)

Accelerated timeline
Conversion completed in 3 months instead of planned 12 months

Resource optimization
Reduced dependency on FTE Tech Writers

Potential scope extension to MWI & Procedure Hub Digitization, unlocking additional value

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Super Major Oil and Gas Company

AI-Powered IT Operations Transformation

Agentic AI-led automation driving operational efficiency, accelerating modernization, and reducing technical debt

Challenges

- High volume of repetitive IT operations tasks increased manual effort and support costs.
- Manual ticket triaging, upgrades, and technical debt management slowed operations.
- Legacy applications required frequent modernization and compatibility upgrades.
- Limited visibility into application health increased support risks and technical debt.

Our Solution

- Developed an AI-powered IT Operations framework to automate support and modernization workflows.
- Implemented agentic workflows for ticket classification, prioritization, and routing.
- Enabled AI-assisted modernization through code analysis, upgrade recommendations, and remediation support.
- Deployed technical debt intelligence agents to identify risks and modernization opportunities.
- Established a proactive operating model with automation, intelligence, and continuous application health monitoring.

Tech Stack

Azure OpenAI | Agentic AI Framework | GitHub Copilot | Intelligent Automation | Application Modernization Accelerators | Enterprise ITSM Integration

Outcome Delivered

~8
FTE savings

Improved MTTR

Accelerated application upgrade cycles

Enhanced application quality and stability

Reduced reliance on manual and repetitive operational activities

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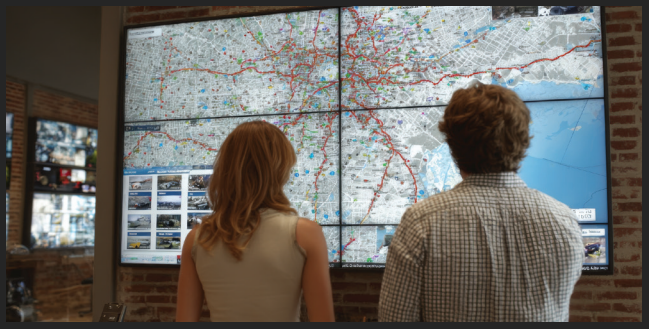
Super Major Oil and Gas Company

AI-Powered STTM Mapping Generation

Accelerating SAP-to-JDE field mapping through contextual AI recommendations



Challenges

- Manual mapping of SAP S/4 fields and tables to corresponding JDE fields was time-consuming and susceptible to incorrect mappings.
- Understanding the underlying business context added complexity, particularly when a single JDE field corresponded to multiple SAP fields across different tables.
- Mapping teams needed multiple potential matches, supported by confidence scores and clear mapping logic, to review and finalize accurate STTM mappings.

Our Solution

- Developed an AI-powered solution that uses JDE field and table names as inputs to identify corresponding SAP S/4 fields and tables.
- Generated multiple mapping recommendations, ranked from high to low based on confidence scores.
- Provided the underlying business context and logic for each recommendation, enabling SAP SMEs, business users, and data analysts to review, validate, and finalize mappings efficiently.
- Built the solution using Microsoft Copilot, Visual Studio, and Python.

Tech Stack

Microsoft Copilot | GPT-5 | Visual Studio | Python

Outcome Delivered

15–20%
Improvement in developer productivity

Significantly reduced STTM mapping processing time

Reduced manual effort while improving mapping efficiency and accuracy

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Super Major Oil and Gas Company

AI-Powered SDLC Acceleration with GitHub Copilot Agent Skills

Domain-trained AI agents accelerate software delivery and reduce development effort across the software development lifecycle

Challenges

- Repetitive SDLC activities consumed engineering capacity and slowed delivery.
- Manual requirements, development, testing, and review processes increased effort and timelines.
- Teams needed to accelerate delivery while maintaining quality and architectural standards.
- Operational overhead reduced sprint capacity for business-critical initiatives.

Our Solution

- Developed GitHub Copilot Agent Skills trained on domain knowledge, engineering standards, and application patterns.
- Automated generation of requirements, test scenarios, and engineering artifacts.
- Enabled AI-assisted impact analysis to accelerate change assessments and reduce manual effort.
- Automated code reviews and test script generation to improve quality and validation cycles.
- Established reusable AI-driven assets to accelerate delivery across projects and platforms.

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Tech Stack

GitHub Copilot | Copilot Agent Skills | AI-Assisted SDLC Automation | Domain-Trained Engineering Intelligence | Automated Testing & Code Review Accelerators

Outcome Delivered

Up to 30% **improvement in delivery velocity** through AI-enabled acceleration across requirements, development, testing, and review activities.

~40% **reduction in effort** for repetitive engineering and SDLC activities, enabling better utilization of development resources.

Increased sprint capacity availability, allowing teams to focus on strategic business enhancements rather than operational overhead.

Improved quality and consistency through automated code reviews, impact analysis, and standardized engineering outputs.

Faster time-to-market for business-critical initiatives by reducing dependencies on manual SDLC processes.

Enhanced business-IT alignment through quicker conversion of business needs into implementable requirements and test scenarios.

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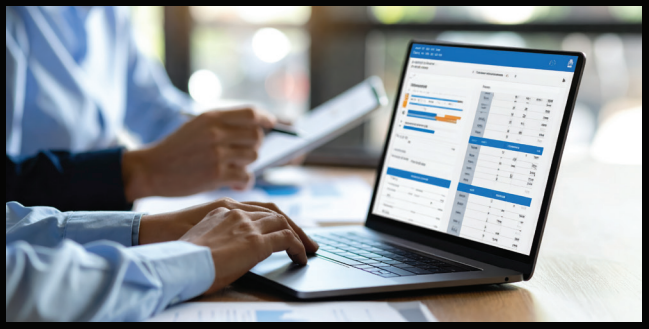
Super Major Oil and Gas Company

Accelerating SDH Data Product Delivery with AI- Powered Notebook Automation

Automating Framework-ready Databricks notebook generation through standardized templates and STTM-driven logic



Challenges

- Manual notebook development slowed SDH data product delivery
- Repetitive coding increased effort and implementation inconsistencies
- Manual STTM interpretation created mapping and transformation errors

Our Solution

- Automated Databricks notebook generation using reusable, standardized templates
- Translated STTM mappings and transformation rules into framework-ready code
- Added validation checks to improve code consistency and quality

Tech Stack

Microsoft Copilot | Databricks | STTM Documents | Framework Knowledge Base | Validation Rules

Outcome Delivered

80%
Reduction in development efforts

35-40+ Hours
Engineering effort saved per data product

Minutes vs. days
Time required to generate framework – ready notebooks

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LTM
Reimagine Experience
Through Data, Design, and AI

LTM

OVERVIEW

Reimagine Experiencefocuses on using AI to transform how customers, employees, and partners interact with the enterprise. By delivering personalized, intuitive, and proactive experiences, organizations can improve engagement, enhance productivity, accelerate service delivery, and create seamless digital journeys across every touchpoint.

USE CASE Click on any of the below stories to explore the details.

1. Reimagining Xperience across personas
2. AI-assisted sketch design to work order optimization
3. Transforming Utility Operations with Gen AI Chatbot
4. AI Bot Squad - Ops, HR, Legal, Finance, Procurement etc
5. Driving Operational Excellence with AI-Powered Crew Mgmt
6. Transforming Offshore Logistics with AI-Powered Planning

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Fortune 1000 Public Utility

Reimagining Experience at Scale

AI-powered workflows and microservices for faster outage recovery and improved CX

Challenges

- Lack of a 360-degree view and defined user personas.
- Siloed experience management and low user adoption.
- Legacy systems unable to scale with growing users/assets.
- Reliance on manual processes caused prolonged outages and slower resolutions.

Our Solution

- Conducted discovery workshops to identify user journeys & pain points.
- Designed and implemented a microservice-based platform tailored to key personas (demand center app and dispatch crew app).
- Migrated from monolithic to microservices for scalability & performance.
- Integrated AI for asset tagging, dispatch, and resolution.
- Delivered real-time updates, transparent reporting, and automated workflows.

Tech Stack

Microservice-based architecture | AI-enhanced asset management |Asynchronous workflow management | Real-time updates and reporting | Modern user experience management platform

Outcome Delivered

5X Improvement in dispatch rate enabling faster outage response

2X Higher user adoption

Crew utilization increased by **25%**, boosting efficiency and resource management

12% System average interruption index decreased, reducing outages

10% decrease in system average interruption duration index

10% reduction in contract crew utilization (cost savings)

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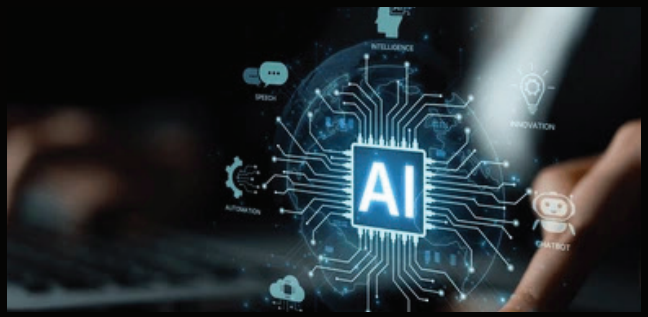
Fortune 1000 Public Utility

Gen AI-Powered Sketch Design

Cut design cycle from 1 day to 1 hour and saved $700K annually



Challenges

- Manual sketch design processes led to inconsistent adherence to standards, resulting in frequent rework and quality issues.
- Quality assurance teams faced significant Problem Statement in verifying the accuracy and completeness of designs, often relying on time-consuming manual reviews.
- Compliance managers struggled to track, document, and enforce regulatory requirements, increasing the risk of non-compliance and audit findings.
- Design engineers spent excessive time performing repetitive checks and corrections impacting productivity and project delays.

Our Solution

- Gen AI-powered automation solution for the entire sketch design process, from input collection to final work order generation.
- Seamless integration with multiple internal databases and external systems for real-time data access.
- Automated geolocation mapping and material requirement calculations to ensure accuracy and compliance.
- Standardization of work orders to enforce consistency and regulatory adherence across all projects.
- Scalable architecture designed to support future enhancements.

Tech Stack

AWS AI-services: Bedrock | AWS Services-cloud base | React | Dynamodb | AWS security services

Outcome Delivered

Automated the entire sketch designing process by fetching the inputs from 10+ systems

5% Reduction in outsourcing by of total designs led to cost recovery of $0.7Mn per year

Reduced cycle time from one day to one hour

Improved compliance and quality

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Fortune 1000 Public Utility

Transforming Utility Operations with Gen AI Chatbot

AI-driven automation delivers 3X efficiency boost

Challenges

- Enable users for swift access to large number of documents & quick response to internal/external customers & regulatory bodies.
- Huge number of documents with large number of pages led to difficulty in getting the required information.
- High TAT as response to internal/external and regulatory bodies in specific template format was time-consuming.

Our Solution

- Built a Gen AI chat platform for instant document access and rapid query response.
- Indexed thousands of documents using AWS Kendra.
- Leveraged Langchain, Claude V3 LLM, and AWS Kendra for intelligent search and answers.
- Enabled document upload and fast information search for users.
- React-based front-end application for rich UX.
- Automated Infra setup and CI/CD for deployments.
- Automated template generation for regulatory responses.

Tech Stack

Gen AI chat platforms (Langchain, Claude V3 LLM, AWS Kendra) | Machine learning models | Azure knowledge fabric for scenario analysis | Cognitive automation and conversational AI | Snowflake as DataLake

Outcome Delivered

3X
Improvement in operational efficiency

40%
Increase in customer satisfaction

<1
Reduction in cycle time for job approval

$200,000
Saved annually by reducing the candidate hiring process

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Fortune 1000 Public Utility

Gen AI Bot Squad

Intelligent automation for faster workflows, real-time insights, and cost efficiency

Challenges

- Employees relied on fragmented systems and manual processes to access information and complete routine tasks.
- High volumes of repetitive operational activities increased support costs and slowed business processes.
- Business teams lacked real-time access to data, insights, and decision support across functional areas.
- Scaling workforce productivity without increasing operational costs remained a key challenge.

Our Solution

- Deployed 18+ GenAI-powered agents across Operations, HR, Legal, Engineering, Finance, Procurement, and Customer Service.
- Enabled conversational access to enterprise knowledge, data, and workflows through a unified AI platform.
- Automated document processing, compliance reviews, outage analysis, hiring, auditing, and engineering validation.
- Leveraged Agentic AI, intelligent search, workflow automation, and enterprise integrations to accelerate decision-making.
- Established a scalable AI foundation for rapid deployment of new business agents.

Tech Stack

Front-end: React, JavaScript, TypeScript, Tailwind CSS | Backend (AWS): Lambda, Step Functions, ECR, Glue, SageMaker, Amplify | AWS AI Services: Bedrock (Claude Sonnet 3 5, Amazon Titan), Kendra | Security: Cognito, AI Gateway, Macie, Guardrail, Secret Manager | Database: Snowflake, DynamoDB, SQL Server

Outcome Delivered

- **18+** AI agents deployed
- **<1 day** approval cycle
- **$2Mn+** annual savings
- **$200K** hiring cost savings
- **40-60%** effort reduction
- Higher productivity & self-service adoption
- Scalable AI foundation for future growth

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Fortune 1000 Public Utility

Driving Operational Excellence with AI-Powered Crew Management

Cut $700K in costs, reduced 2Mn interruption minutes, and 10% productivity boost

Challenges

- Real-time Visibility Gap: The dispatch team lacked instant access to resource availability, hampering efficient assignment during outages.
- Delayed Resolutions: Manual resource matching extended the assignment and resolution times, slowing service restoration.
- Poor Reliability Ranking: Increased CMI pushed the client into the fourth quartile for customer average interruption duration index (CAIDI), damaging its reputation.
- Crew Inefficiency: Uncertainties regarding the availability of daily crew, driven by dynamic schedules, led to high downtimes and delayed work.

Our Solution

- Developed a centralized system to maintain and provide easy access to real-time resource availability data.
- Built a machine learning model to recommend optimal crew configurations based on historical schedules and crew compositions.
- Smart Assignment Engine: Integrated real-time crew location, event proximity, and resolution time estimates to rank and assign the best crews, minimizing customer interruptions.
- Automated Guidance: Created a platform to suggest crew configurations using past data, empowering dispatchers with ac tionable insights.
- Designed a metrics dashboard to track CMI reduction, productivity gains, and overall performance improvements.

Tech Stack

Predictive AI | Machine Learning models | BlueVerse

Outcome Delivered

Cut average crew assignment time per outage by three minutes, accelerating response efficiency

CMI reduced by two million minutes: Significantly lowered customer interruption durations, improving CAIDI rankings

$700K
Contract Cost Saved: Boosted internal crew uptime, reducing reliance on expensive contract crews

8-10%
Productivity Gain: Enhanced crew performance, driving operational excellence and cost savings

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Global Marine Technology & Digital Solutions Provider

Transforming Offshore Logistics with AI-Powered Planning

Digitizing offshore logistics operations through intelligent planning, real-time tracking, and AI-driven optimization across personnel, vessels, and critical supply chains

Challenges

- Crew movement, vessel scheduling, and material logistics operated across fragmented systems with limited visibility.
- Manual planning and resource allocation resulted in operational inefficiencies and underutilized assets.
- Compliance validation for personnel, vessels, and safety certifications required significant manual effort.
- Weather disruptions and scheduling conflicts created delays across offshore operations.
- Vendor reconciliation and performance tracking lacked real-time operational transparency.

Our Solution

- Implemented a centralized offshore logistics platform integrating helicopters, crew boats, supply vessels, offshore platforms, and vendor ecosystems.
- Enabled intelligent planning and scheduling across personnel movement, cargo logistics, fleet utilization, and offshore operations.
- Introduced AI-powered optimization and decision-support capabilities for routing, allocation, weather disruptions, and capacity management.
- Automated compliance validation, real-time asset tracking, KPI reporting, and vendor payment reconciliation.
- Delivered a single operational view across offshore logistics, improving coordination, visibility, and decision-making.

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Tech Stack

Marlin Offshore Logistics Platform | AI Planning Assistant | Optimization Engine | React | TypeScript | Node.js | PostgreSQL | Azure DevOps | Kubernetes | OpenShift | SAP Integration | GIS/AIS Integration

Outcome Delivered

20-40%
reduction in logistics turnaround time through optimized planning and scheduling.

15-30%
reduction in operational costs through improved fleet utilization and resource optimization.

10-20%
reduction in fuel consumption through intelligent routing and asset allocation.

20-40%
improvement in quayside and offshore logistics efficiency through real-time visibility and automated workflows.

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Domain Meets AI
Energizing Efficiencies and Powering Possibilities

OVERVIEW

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Domain Meets AIbrings together deep sector expertise and AI-driven intelligence to address critical industry priorities. The use cases showcase how organizations are improving reliability, efficiency, sustainability, and customer value through domain-led innovation.

USE CASE Click on any of the below stories to explore the details.

- Driving Digital Field Transformation
- Anomaly Detection for Unconventional Wells
- IPR Estimation at Scale
- Calibration for Optimized Well Production
- Real-Time Well Rate Estimation with ML NET
- Accelerating Production Insights with Generative AI
- From Silos to Insights
- Hydro Forecasting Reinvented
- Digital Twin for Compressors: Edge-to-Cloud Intelligence
- Transforming Industrial Safety with Vision AI
- Maximizing Reliability with AI-Driven Uncrewed Operations
- Optimizing Gas Lift Compression for Production Wells
- Driving Safety & Cost Efficiency
- Optimizing Maintenance with GenAI for Australia Asset Class
- Preventing Equipment Failures with AI-Driven Valve Positioner Monitoring
- Cut Risk Reporting Time by 40% with AI-Driven Insights
- Turbine Intelligence for Faster Resolution
- Improving Outage Restoration Accuracy
- Equipment Failure Intelligence & Predictive Maintenance
- Agentic AI for Intelligent Field Operations
- Proactive Outage Forecasting Agent
- SmartSignal AI-Powered Predictive Maintenance & Anomaly Detection
- Reimagining Pole Inspections with Vision AI
- Automated Well Log Interpretation Using Machine Learning
- GenAI-Powered Drilling Intelligence
- Smart Restoration Agent
- Supply Chain Risk Sensing
- Comprehensive Duration Analyzer Agent
- Crew Optimization & Simulation Agent
- Operations Intelligence for Drilling
- Predictive Maintenance for ESPs

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American Multinational Company

Driving Digital Field Transformation

AI-powered insights and real-time decision support for safer, smarter operations

Challenges

- Fragmented and hard-to-integrate data across OT and IT networks.
- Manual, time-consuming processes slowed decision-making and productivity.
- Lack of user-friendly, real-time support for field and office staff.

Our Solution

- Intelligent agents extract and process data from multiple sources for timely, precise insights.
- Amazon Bedrock powers robust embeddings and daily reporting with advanced LLMs.
- RAG system contextualizes information, optimizing responses for relevance and accuracy.
- GenAI delivers daily briefings, real-time Q&A, and optimized route planning for field teams.

Tech Stack

AWS Bedrock (Titan embedding, Claude LLMs), Anthropy Claude Sonnet, Hiaku LLMs | Data services: DBT, Snowflake, Stonebrach | Business apps: SCADA, SAP, GIS | AWS Transcribe, AWS Polly for audio/transcription, DynamoDB, S3 for storage | Streamlit for UI framework

Outcome Delivered

35–40%
Increase in productivity due to Gen AI-powered daily briefings & streamlined workflows

Significant reduction in non-value-added manual effort—engineers spend less time searching for information

Real-time, accurate insights enable safer and more efficient completion of field tasks

Automated task prioritization and optimal route selection improve team's efficiency

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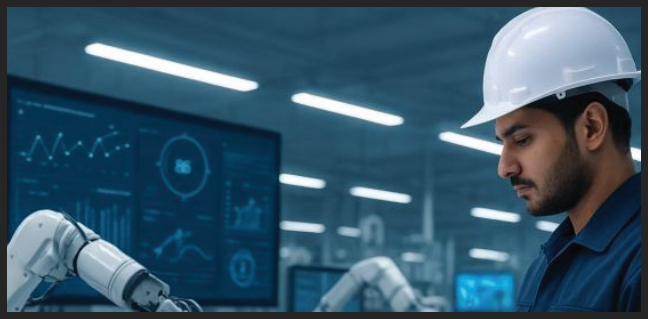
Supermajor Oil & Gas Company

AI-Driven Anomaly Detection for Unconventional Wells



Challenges

- Manual surveillance and alert configuration consumed significant expert time.
- Scattered data systems delayed anomaly detection and response.
- Difficulty in classifying and acting on short- and long-term well anomalies.
- Limited scalability for monitoring a growing number of wells.

Our Solution

- Developed an automated anomaly detection solution using a heuristic Z-score model.
- Leveraged Azure AI/ML and Seeq for real-time monitoring of 1,000+ gas-lift wells.
- Implemented rule-based and pattern-recognition engines for anomaly classification.
- Integrated real-time data for proactive well management and decision-making.

Tech Stack

Azure AI/ML, Seeq, Python, PETEX, Relational Databases | Z-Score Statistical Model for anomaly detection | Real-time data integration and scalable analytics infrastructure | SQL for data storage and dashboarding

Outcome Delivered

Saved **800+** man hours per month by automating anomaly detection and eliminating manual surveillance

Enabled real-time operational insights for over **1,000** gas-lift wells, improving responsiveness

Accelerated root cause analysis and anomaly classification, reducing downtime and operational delays

Scalable analytics infrastructure supports seamless monitoring as new wells are added

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Super Major Oil and Gas Company

Smarter Wells, Faster Decisions: AI-Driven IPR Estimation at Scale

Challenges

- Traditional inflow performance models failed for rapidly declining reservoir pressures.
- Manual, error-prone IPR estimation processes.
- Difficulty in forecasting key subsurface metrics for unconventional wells.
- Need for more proactive, data-driven well management.

Our Solution

- Built AI/ML models on Azure for intelligent IPR and reservoir pressure estimation.
- Integrated physics-based and machine learning inputs for robust predictions.
- Developed modules for real-time decision support and production optimization.
- Enabled scalable, automated workflows for subsurface operations.

Tech Stack

Azure AI/ML Workspace, Python, PETEX, Harmony Models | Machine learning for historical and predictive analytics | Physics-informed input integration | Relational databases for data management

Outcome Delivered

Delivered advanced, ML-driven IPR estimation for unconventional wells, improving production planning

Enabled proactive well management by forecasting pressure and drawdown trends

Enhanced accuracy by integrating physics-informed inputs with AI models

Supported quicker, data-driven decisions, reducing operational overhead

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Super Major Oil and Gas Company

Zero Guesswork: AI-Driven Calibration for Optimized Well Production

Challenges

- Manual calibration of production networks was time-consuming and error-prone.
- Difficulty in minimizing production gaps and optimizing network performance.
- Complex, multi-constraint optimization requirements.
- Need for real-time data integration and scalable scenario processing.

Our Solution

- Automated production network calibration using the PSwarm algorithm and PETEX suite.
- Developed a production gap minimization engine with real-time feedback loops.
- Enabled multi-constraint optimization and cluster-based parallel processing.
- Integrated real-time data for continuous calibration and updates.

Tech Stack

PETEX, PSwarm Model, Cluster Management, Relational Databases Real-time data integration platform | Distributed computing for parallel scenario processing | Machine learning for optimization & calibration

Outcome Delivered

Saved 1,800+ hours per field annually by automating calibration of complex production networks

Real-time rate prediction minimized unplanned downtime and production losses

Improved model reliability and reduced model-to-field error percentage for consistent forecasts

Cluster-based parallel processing accelerated calibration cycles and production adjustments

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Super Major Oil and Gas Company

No More Blind Spots: AI-Driven, Real-Time Well Rate Estimation with ML NET

Challenges

- Lack of multiphase flow meters in many wells limited visibility.
- Manual, delayed production allocation cycles.
- Need for scalable, cost-effective alternatives to traditional evaluation methods.
- Difficulty in tracking performance across diverse asset types.

Our Solution

- Developed ML-based rate estimation engine using ML NET.
- Automated model lifecycle management for continuous accuracy.
- Enabled high-frequency output and integrated accuracy monitoring.
- Provided alternative production evaluation methodology for non-instrumented wells.

Tech Stack

ML NET, Python, Relational Databases | Automated pipelines for model training and validation | High-frequency data processing and analytics

Outcome Delivered

Provided real-time well rate estimates for wells lacking multiphase flow meters, enabling faster decisions

Automated model lifecycle management ensured sustained accuracy and adaptability

Offered a scalable, cost-effective alternative to traditional production evaluation methods

High-frequency output and transparent analytics improved stakeholder trust and auditability

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American Oil & Gas Company

Accelerating Production Insights with Generative AI

Automated HSE data analysis, enabled faster decisions, and minimized manual effort with XPERT AI-powered platform

Challenges

- Substantial time and effort required to locate and analyze relevant production and HSE data.
- Manual processes slow down business decisions and reduce overall efficiency.
- Reports often fail to provide actionable insights promptly, leading to delays in decision-making.
- Deriving insights required reference multiple reports which took significant time resulting in inefficiencies.

Our Solution

- Developed and deployed XPERT, a generative AI-powered platform.
- Automated the process of retrieving & analyzing production &HSE data.
- Enabled business and technology teams to make faster, more informed decisions with minimal manual effort.
- Customized and consolidated reports delivered based on user-specific requests.
- Performance tracking insights made readily accessible to all stakeholders.

Tech Stack

Custom-built AI solution leveraging generative AI technology | Automated retrieval, synthesis, and analysis of HSE documentation and production/deferment data

Outcome Delivered

Quick access to data and insights enables faster business decisions

Minimized time spent searching for information across multiple reports

$1.44Mn business value Delivered

Provided actionable insights and recommendations through consolidated reports, driving production improvement and operational efficiency

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Microsoft ADME

From Silos to Insights

Redefining Data Discovery with Gen AI and OSDU

Challenges

- Fragmented data silos across proprietary E&P systems.
- Complex data integration and inconsistent data quality.
- Limited collaboration and slow decision-making due to legacy infrastructure.
- Manual, time-consuming model updates and data preparation.
- Security, governance, & skill gaps in adopting open standards & AI.

Our Solution

- Implemented Gen AI-powered Virtual Data Analyst (VDA) on the OSDU™ Data Platform to enable natural language search & interpretation of subsurface data.
- Integrated Microsoft Azure Data Manager for Energy (ADME) and OSDU APIs for seamless, secure data access.
- Enabled advanced analytics and natural language queries using Azure OpenAI and Copilot. Delivered a user-friendly interface for geoscientists and business users.
- Unified diverse datasets—well logs, seismic, rock, and fluid—into a single subsurface model for better decision-making.

Tech Stack

Microsoft Azure Data Manager for Energy (ADME) | OSDU™ Data Platform and APIs | Azure Data Lake and Vector Store | Microsoft Search and AI Document Intelligence

Outcome Delivered

Centralized subsurface data to eliminate silos

Accelerated data discovery cutting interpretation cycles by 20–30%

Automated data quality control and governance

Delivers savings USD ~2–3Mn annually By time saving from manual prep

Enhanced insight generation and supports new discoveries

Scalable to non-conventional energy domains

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Fortune 1000 Public Utility

Hydro Forecasting Reinvented with AI

ML-powered inflow predictions achieved 10–15% MAPE accuracy, saving $750K annually and boosting operational agility

Challenges

- Inaccurate inflow forecasts led unnecessary water spill & lost value.
- Frequent pond level approaches to maximum limits, reducing operational flexibility.
- Suboptimal generation scheduling and energy market participation due to unreliable forecasts.
- Reliability concerns, including risk of uneconomic dispatch and potential load shedding.

Our Solution

- Data Science: Developed a machine learning model for 7-day hourly inflow forecasts, achieving 10–15% MAPE accuracy. Forecasts updated hourly, available 75 minutes before each hour for real-time operations.
- Data Engineering: Automated data ingestion from multiple sources into Snowflake for model training and reporting. Enabled direct comparison of forecast accuracy (MAPE/MAE) between DSM and DOPD models.
- Reporting: Tableau dashboard visualizes forecast performance, error metrics, and financial benefits. Supports trading and strategy decisions with clear comparisons of actuals vs forecasts.

Tech Stack

Machine learning, Python (forecasting model) | S3, nowflake, Lambda (data engineering) | Tableau (front-end/dashboard)

Outcome Delivered

Improved forecast accuracy and operational planning

Enhanced real-time decision-making and resource management

Estimated hard savings of $750,000 per year since 2024 by reducing avoidable spill

Optimized hydroelectric operations and better compliance with regulatory and environmental requirements

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US Midstream Major

Digital Twin for Compressors: Edge-to-Cloud Intelligence

Unified analytics and automation deliver $3Mn savings, cut emissions by $05Mn per year

Challenges

- Manual and siloed compressor onboarding and data definitions.
- Lack of predictive analytics and real-time operational insights.
- High unscheduled downtime and suboptimal asset performance.
- Complex data aggregation & reporting across distributed assets.

Our Solution

- Deployed the Insight NXT platform for unified edge-to-cloud analytics and orchestration.
- Enabled compressor onboarding, predictive analytics, and remote monitoring.
- Automated data aggregation, alerting, and emissions reporting.
- Integrated with enterprise systems for seamless data flow and compliance.
- Delivered rapid, scalable deployment across 130 sites.

Tech Stack

Insight NXT Platform (IIoT, AI/ML, Edge and Cloud) | Real-time analytics at the edge and in the cloud | Low-code platform with self-service analytics | Integration with SCADA, PI, sensors, and enterprise systems (EMS, EHS, HRIS)

Outcome Delivered

Over $3Mn in optimal operations savings

Reduced emissions by ~$0.5Mn per year

6–8% reduction in reporting time

~4 hours saved per alert

Improved asset visibility, performance, and useful life; reduced downtime and operational costs

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Super Major Oil and Gas Company

AI-Powered Predictive Maintenance for ESPs

Boosted MTBF by 10% and saved $500K annually

Challenges

- Frequent Electric Submersible Pump (ESP) failures led to high downtime & costs.
- High failure rates due to operational complexity and limited diagnostic capabilities and low ROI from traditional physics-based models requiring continuous calibration.
- Difficulty in monitoring and optimizing performance due to limited diagnostics and frequent cavitation events.

Our Solution

- Implemented an ML-based predictive maintenance solution tailored for ESPs in dry gas wells.
- Streamed and preprocessed real-time sensor data (pressure, temperature, current, vibration, flow, and GLR).
- Developed and trained SOM models to detect anomalies, predict failures, and optimize pump operation.
- Enabled anomaly detection, diagnostics, and prescriptive actions for proactive maintenance.
- Integrated alerts and recommendations into operator workflows.

Tech Stack

Data Collection: Rockwell PLCs (SCADA systems, IoT gateways) | Preprocessing: Python (Pandas, NumPy) | Modeling: Self-Organizing Map (SOM) Model | Alerting & Integration: Alerts integrated into the application layer above Rockwell PLCs (SCADA) | Database/Storage: SQL Server

Outcome Delivered

Increased mean time between failures (MTBF) of ESPs by an average of 10%

Achieved estimated annual savings of ~$500,000

Enabled earlier detection of anomalous pump operations for proactive maintenance

Improved equipment reliability,reduced downtime, & enhanced operational efficiency

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US Midstream Major

AI-Powered Supply Chain Risk Sensing

Enhanced visibility, predicted supplier risks early, and reduced production downtime with automated mitigation

Challenges

- Lack of visibility on supply parts delivery led to delayed shipments and incorrect inventory.
- Short shipments and breakdowns caused production delays.
- Manual tracking and coordination for planners and business users.
- High costs associated with even brief production downtime.

Our Solution

- Developed an AI/ML tool to sense and mitigate supplier risks using current data points.
- Built machine learning models to predict and flag supplier risks before they impact production.
- Automated notifications and escalation to responsible teams.
- Enabled proactive mitigation actions to minimize delays.
- Provided continuous model evaluation and improvement for sustained results.

Tech Stack

AI/ML tool for supply chain risk sensing and mitigation | Machine learning models for risk prediction | Automated person-in-charge assignments and notifications | Model metrics evaluation for continuous improvement

Outcome Delivered

- Enhanced visibility and resiliency in the supply chain
- Early identification and mitigation of supplier risks
- Reduced production downtime and associated costs
- Streamlined communication and faster response to disruptions

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iNXT Accelerators for EGUL

Maximizing Reliability with AI-Driven Uncrewed Operations

Enabled real-time simulation, predictive analytics, and automated workflows to reduce failures and optimize asset performance

Challenges

- Frequent asset failures and unpredictable equipment downtime hindered operational efficiency.
- High maintenance and repair costs, with suboptimal asset usage, limit equipment lifespan.
- Ensuring safety and environmental compliance was challenging due to operational risks and the need for continuous monitoring.
- Accelerating root cause analysis was difficult without effective knowledge capture and advanced pattern recognition.

Our Solution

- Established a unified namespace to organize and contextualize data for advanced analytics. Enhanced data enrichment and processing for pattern recognition and alarm management.
- Deployed AI/ML models for actionable insights and forecasting.
- Implemented a Gen AI-powered compressor bot for real-time, natural language data access.
- Enabled comprehensive workflow management for efficient root cause analysis and recommendations.

Tech Stack

Unified Namespace (UNS) | Data enrichment and processing pipelines | AI/ML models | Gen AI-powered compressor bot | Digital twin models for real-time simulation and scenario planning

Outcome Delivered

- Real-time simulation of compressor stations using digital twin models for scenario planning and optimization
- Advanced analytics deliver actionable insights from continuous real-time data analysis
- Generative AI-powered compressor bots enable natural language interaction with real-time and historical data
- Automated alert and alarm management ensures timely, proactive responses
- Comprehensive workflow management streamlines root cause analysis and recommendations across sites

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American Multinational Company

Optimizing Gas Lift Compression for Production Wells

AI-powered real-time monitoring and automation for efficiency and performance

Challenges

- Manual processes for managing compressor energy use and gas injection were inefficient.
- Lack of real-time alerting and workflow automation led to delayed responses and suboptimal performance.
- Difficulty in identifying the optimal injection point and amount of gas for maximum efficiency.

Our Solution

- Designed and implemented an AI solution to optimize compressor operations in production wells.
- Enabled real-time alerting, alarm management, and workflow automation.
- Delivered a system that efficiently manages energy use & maximizes liquid flow, supporting continuous production improvements.

Tech Stack

Custom-built AI solution leveraging Palantir platform | AI-driven optimization for compressor energy, gas injection volume, and injection point selection | Real-time monitoring and predictive analytics for operational decision support

Outcome Delivered

Real-time alerting, alarm management, and workflow automation for proactive operations

Efficient energy use, reducing operational costs and environmental impact

Maximized liquid flow to the surface, improving overall production rates

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Super Major Oil and Gas Company

Smarter Turnarounds with AI: Driving Safety and Cost Efficiency

Save up to $10Mn, cut planning time by weeks, & reduce risk with predictive analytics and automated workflows

Challenges

- High cost of unplanned downtime at large facilities.
- Scope creep, contractor availability issues, and fragmented visibility disrupt schedules and budgets.
- Manual, time-consuming shift handovers and log reviews led to errors and delays.
- Data scattered across spreadsheets, emails, and legacy systems hampered fast decision-making.

Our Solution

- TAR Event Manager Copilot: A conversational partner that understands and draws from real-time data, historical trends, and even shift logs to provide clear, actionable answers instantly.
- Predictive Analytics Engine with S-Curve Tracking.
- NLP Work Analyzer: This tool uses natural language processing to clean, structure, and standardize them work packages.
- Shift Handover Intelligence: Compiles updates from logbooks, emails, and voice notes into a single, prioritized summary.

Tech Stack

AI and Machine Learning: Azure Machine Learning, NLP models, predictive analytics |
Data Management: ADF, Azure Data Lake, Synapse
Analytics | User Interface: Power BI dashboards, Power Apps, web apps for end-user consumption

Outcome Delivered

~$10Mn saved per day by minimizing unplanned downtime

12% reduction in turnaround scope through AI-driven task validation

48 hour delay avoided by early detection and resequencing of critical tasks

Weeks of manual planning reduced to hours with NLP-based job plan

50% faster shift handover process through automated, AI-generated summaries

Multi-million dollar cost overruns prevented by real-time risk detection

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Supermajor Oil & Gas

Optimizing Maintenance with Generative AI for Australia Asset Class

Saved $400K–$800K annually, cut manual effort, and enabled scalable outcome classification across equipment classes

Challenges

- Reviewing lengthy text in work orders to accurately classify test outcomes (pass/fail) was manual, time-intensive, and error-prone.
- The existing text analytics solution relied on manual keyword identification, which varies across equipment classes, making the process non-scalable and inconsistent.

Our Solution

- Implement Generative AI (GenAI) models to analyze work order text automatically.
- Classify outcomes (failures and passes) at scale without manual intervention.
- Eliminate manual keyword mapping, reducing human effort & errors.
- Enable a scalable, intelligent approach for outcome classification across all equipment classes.

Tech Stack

Tailwind CSS | AWS API Gateway | AWS Lambda | AWS Step Functions | AWS Bedrock | Claude 3 5 Sonnet | Amazon Titan | Bedrock Guardrails

Outcome Delivered

$400K–$800K
per year savings by extending planned work order frequency from 1 year to 2 years (50–100% optimization)

$8Mn–$15Mn
savings per year from 10–20% reduction in annualized maintenance spend

$10Mn–$30Mn
per year additional value from improved uptime (1–3 extra production days at $10Mn/day) enabled by optimized maintenance programs

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Super major Oil & Gas

Preventing Equipment Failures with AI-Driven Valve Positioner Monitoring

Enabled early anomaly detection, avoided costly outages, and prevented $32Mn+ production losses through predictive insights

Challenges

- The Wheatstone LNG plant experienced frequent equipment and trip events primarily caused by valve positioner failures.
- Historical data analysis revealed early indicators of valve positioner faults that could have prevented these failures if detected in time.
- However, due to the absence of regular monitoring, these early warning signs were missed, resulting in unanticipated equipment trips and significant production losses.

Our Solution

- Implemented advanced anomaly detection techniques and integrated the results into PI Vision.
- Automate continuous monitoring of valve positioner performance.
- Provide real-time alerts to onsite personnel.
- Enable anomaly verification annotation for proactive maintenance actions.

Tech Stack

Data Ingestion and Integration | Anomaly Detection and Analytics | Visualization and Monitoring | Alerting and Notifications | Storage and Data Management | Security and Access Control | CI/CD and Deployment | Observability and Logging

Outcome Delivered

Early detection of valve positioner failures prevented unexpected plant or equipment trips

Minimized downtime and avoided costly production losses through predictive maintenance

Improved operational reliability and safety by addressing anomalies before escalation

Avoided major incidents like the 2023 failure that caused $32Mn Lost Production Opportunity (LPO)

Demonstrated success: August 2024 detection of Turbo Expander IGV issue, preventing ~$0.9Mn day LPO

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Fortune 500 Utility Leader

Cut Risk Reporting Time by 40% with AI-Driven Insights

Optimized trading decisions, reduced compliance risk, and boosted efficiency through predictive models and automation

Challenges

- Disconnected platforms and manual processes hinder end-to-end automation and operational efficiency.
- Static systems struggle to learn and adapt to rapidly changing market and regulatory environments.
- Absence of conversational, natural-language interfaces makes risk insights difficult to access and act upon in real time.

Our Solution

- Predictive Models: Developed AI/ML models for predictive risk, VaR/ES, and anomaly detection.
- Simulations: Implemented AI-driven simulations for advanced scenario analysis with Azure Knowledge Fabric.
- Strategy Optimization: Created AI-powered strategy optimization with dynamic parameter adjustment.
- Risk Monitoring, Regulatory Reporting, and testing.
- Cognitive Automation: Built cognitive automation for routine tasks, including chatbot and Azure Copilot integration.
- Unified Platform: Integrated components into a unified, cloud-based platform.

Tech Stack

GitHub copilot | Azure OpenAI | Azure Foundry | Machine Learning models

Outcome Delivered

Optimized Returns: Improved decision turnaround time by 30–50% through AI-driven predictive analytics and simulations. (Indicative)

Reduced Risk: Reduced potential risk exposure by 20–35% using predictive risk models and scenario-based simulations. (Indicative)

Increased Efficiency: Freed up 40–60% of expert analyst effort by automating reporting, analysis, query resolution via conversational AI. (Indicative)

Enhanced Compliance: AI-powered tools streamlined regulatory reporting

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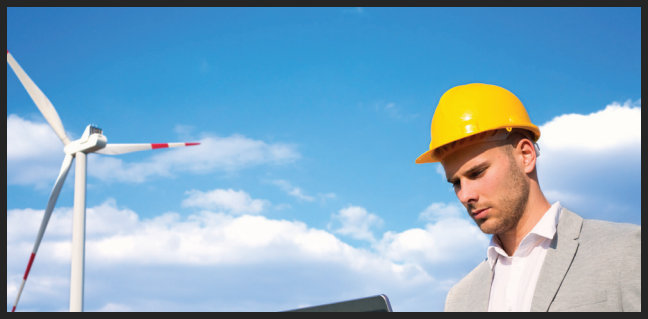
World's Leading Integrated Energy Company (LNG)

AI-Powered Turbine Intelligence for Faster Resolution

Enabling real-time access to critical turbine OEM data, reducing downtime risk, and improving maintenance accuracy through conversational AI



Challenges

- Unplanned turbine trips caused significant lost production opportunity (LPO) and plant downtime.
- Field teams required rapid, trusted access to turbine manuals and part information, but existing OEM documentation was extremely large (1,300–2,000+ pages), difficult to search onsite, and slow to cross-reference with JDE material data, increasing repair time and risk of incorrect part ordering.

Our Solution

- Chat-based LLM solution developed to help the Turbine Team identify turbine part numbers, lookup operating and troubleshooting instructions for Turbine operations and maintenance, as well as the ability to cross reference part numbers with JDE item numbers, retrieving suppliers' details for JDE parts using agentic AI.

Tech Stack

Databricks | SharePoint | Generative AI

Outcome Delivered

- Reduced time to resolution during turbine events
- Improved first-time-right part identification, minimized ordering errors and material losses
- Provided a mobile-first experience for onsite technicians
- Helped mitigating high-impact production losses

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Fortune 1000 Energy Company

Improving Outage Restoration Accuracy with Agentic AI

Dynamic, data-driven Estimated Restoration Time (ERT) predictions leveraging real-time grid conditions, historical data, and crew progress

Challenges

- Poor customer communication during outages.
- Lack of dynamic updates as field conditions changed.
- Unreliable Estimated Restoration Times (ERTs).
- Manual estimation based on limited historical data.

Our Solution

- Designed a Smart Restoration Predictor Agent, an Agentic AI solution that continuously predicts outage restoration timelines.
- The agent leverages historical outage data, real-time grid conditions, and crew progress updates to dynamically adjust ERTs and provide accurate, real-time insights across operations.

Tech Stack

GridVerse™ | Agentic AI | MLOps

Outcome Delivered

50%+ improvement in restoration time accuracy

Real-time ERT updates improving customer communication

Reduced manual estimation effort

Increased trust in outage resolution timelines

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British Water Supply and Treatment Utility Company

Agentic AI for Intelligent Field Operations

Agentic, multi-agent solution enabling contextual knowledge access, automated workflows, and seamless field operations

Challenges

- Fragmented SOPs, manuals, and alarm-fix records made on-site troubleshooting slow and inconsistent.
- Heavy reliance on manual search and back-office support increased resolution delays.
- Lack of real-time, contextual knowledge access reduced first-time fix rates and operational efficiency.

Our Solution

- Built SSAM Buddy, an agentic AI-powered, conversational field assistant for real-time knowledge access.
- Deployed a multi-agent architecture.
- Conversational agent for issue understanding.
- RAG-based knowledge retrieval from SharePoint SOPs/FAQs.
- Intent routing for resolution/escalation workflows.
- Ticketing agent for ITSM (Samanage) integration.
- Learning agent for continuous KB updates.
- Delivered a mobile-enabled PWA, ensuring seamless field accessibility.

Tech Stack

Azure OpenAI (GPT-4.1) | Azure AI Search | Azure Functions | SharePoint | Samanage ITSM

Outcome Delivered

Enabled technicians to scan and access solutions across 500+ technical documents instantly

30–40% reduction in time spent searching for relevant document

20–25% improvement in issue resolution time with faster access to SOPs and guidance

Responses generated in <20 seconds, enabling real-time decision support in the field

15–20% improvement in first-time fix rate through AI-driven troubleshooting Reduced dependency on back-office support

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Super Major Oil and Gas Company

AI-Powered Equipment Failure Intelligence & Predictive Maintenance

Generative AI transforms decades of maintenance records into actionable failure intelligence

Challenges

- 115,000+ historical work orders contained valuable reliability insights trapped in unstructured records.
- Traditional methods made failure pattern and trend analysis difficult and time-consuming.
- Limited visibility into recurring failure modes impacted predictive maintenance efforts.
- Reliability teams lacked scalable mechanisms to proactively improve asset performance.

Our Solution

- Developed a GenAI-powered failure intelligence solution to analyze unstructured maintenance and work order data.
- Automated identification of recurring failure patterns, root causes, and reliability trends.
- Applied AI-driven classification with contextual explanations to improve insight accuracy and usability.
- Processed historical maintenance records at enterprise scale, accelerating knowledge extraction.
- Established a data-driven foundation for reliability improvement and predictive maintenance.

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Tech Stack

Generative AI | Predictive Maintenance Analytics | JD Edwards | Failure Intelligence Engine | Asset Reliability Analytics | Maintenance Knowledge Mining

Outcome Delivered

95% **classification accuracy** achieved during proof-of-concept validation.

Processed 115,000+ **historical work** orders in approximately 2.5 hours, compared with an estimated 16,000 manual person-hours.

Avoided approximately AUD $2.8Mn **in labor** costs through large-scale automation of maintenance intelligence activities.

Unlocked previously inaccessible operational knowledge embedded within unstructured work order records, accelerating maintenance insight generation.

Strengthened predictive maintenance programs through improved visibility into recurring failure patterns and asset performance trends.

Supported Failure Modes and Effects Analysis (FMEA) initiatives, contributing to an estimated $100Mn **potential business value** through enhanced reliability and proactive maintenance

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Super Major Oil and Gas Company

SmartSignal AI-Powered Predictive Maintenance & Anomaly Detection

AI-driven early warning intelligence enables proactive maintenance, improves asset reliability, and reduces production losses

Challenges

- Reactive monitoring and threshold-based alarms limited early visibility into equipment degradation.
- Emerging asset issues often went undetected, increasing outage and production risks.
- Reactive maintenance resulted in higher repair costs and unplanned interventions.
- Maintenance teams lacked predictive insights to proactively manage asset health.

Our Solution

- Implemented SmartSignal, an AI-powered predictive maintenance platform for continuous monitoring of critical assets.
- Leveraged historical and real-time sensor data to identify anomalies before threshold violations occur.
- Enabled intelligent anomaly detection against expected performance baselines.
- Integrated root-cause diagnostics and failure prediction to support proactive maintenance decisions.
- Delivered early-warning alerts and established a predictive reliability framework for long-term asset performance.

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Tech Stack

SmartSignal Predictive Analytics Platform | AI/ML Models | Real-Time Sensor Integration | Predictive Maintenance Engine | Root Cause Diagnostics | Anomaly Detection Framework

Outcome Delivered

Enabled proactive detection of equipment anomalies before operational failures occurred, reducing reliance on reactive maintenance practices.

Avoided maintenance and production losses through early identification of equipment degradation and emerging failure conditions.

Improved uptime, reliability, and production continuity across monitored field assets.

Reduced risk of unplanned outages through advanced predictive analytics, anomaly detection, and early intervention strategies

Enhanced maintenance decision-making by providing data-driven insights, root cause diagnostics, and failure forecasting capabilities.

Improved workforce productivity by reducing firefighting activities and enabling more effective maintenance planning and resource utilization.

Demonstrated significant cost avoidance, including scenarios where early warnings helped prevent compressor failures with an estimated avoidance value of approximately $250K per event.

Established a scalable predictive maintenance capability with potential applicability across power generation, manufacturing, chemical, and process industries.

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Global Energy Technology Provider

DrillMiner: AI-Powered Operations Intelligence for Drilling

Transforming drilling operations and enabling engineers to access complex well data, uncover insights and make faster decisions.

Challenges

- Critical drilling and well-construction data was stored across complex EDM databases, requiring specialized knowledge to access and analyze.
- Engineers spent significant time navigating hundreds of interconnected data tables and building manual queries.
- Valuable operational insights remained locked within technical systems, limiting accessibility across teams.
- Fragmented workflows and data-quality challenges slowed decision-making and reduced operational efficiency.

Our Solution

- Developed DrillMiner, a GenAI-powered operations intelligence platform for drilling and well construction environments.
- Enabled engineers to query complex EDM databases using natural language without SQL expertise.
- Automated data retrieval, analysis, visualization, and insight generation through conversational AI.
- Implemented built-in analytical capabilities including drilling performance analysis, NPT insights, hazard identification, and data-health monitoring.
- Delivered real-time dashboards, AI-generated summaries, and collaborative workspaces for knowledge sharing and decision support.

Tech Stack

Azure OpenAI | GPT Models | LangGraph | LangChain | Python | Node.js | Angular | SQL Server (EDM) | PostgreSQL | MongoDB Atlas | Redis | ECharts

Outcome Delivered

Eliminated dependency on SQL specialists

Improved visibility into drilling performance, operational risks, and well data quality

Accelerated engineering analysis and decision-making through conversational AI and automated data exploration

Reduced time spent on data retrieval and reporting

Enabled self-service analytics through real-time dashboards, AI summaries, and automated visualizations

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Global Exploration & Production Company

Automated Well Log Interpretation Using Machine Learning

AI-powered electrofacies classification that enables faster reservoir characterization

Challenges

- Manual well log interpretation is time-consuming and highly dependent on specialist expertise.
- Large volumes of petrophysical data make electrofacies identification difficult to scale.
- Inconsistent interpretation methodologies can impact reservoir evaluation outcomes.
- Delayed subsurface insights slow exploration and development decisions.

Our Solution

- Developed an ML-powered solution to automate electrofacies classification from well log datasets.
- Trained machine learning models using historical well data to identify reservoir facies patterns.
- Automated facies prediction, visualization, and interpretation workflows.
- Enabled rapid generation of well log strip logs and subsurface insights.
- Delivered an interactive platform to support faster reservoir evaluation and geological analysis.

Tech Stack

Machine Learning | Electrofacies Modeling | Well Log Analytics | Reservoir Characterization | Python | Interactive Visualization Platform

Outcome Delivered

Accelerated well log interpretation through automated electrofacies classification

Reduced dependency on manual analysis

Improved reservoir characterization accuracy through ML-driven pattern recognition

Enhanced scalability by processing large well log datasets efficiently

Enabled faster subsurface decision-making

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Global Exploration & Production Company

Well Reports Insights: GenAI-Powered Drilling Intelligence

Transforming drilling and completions reporting through AI-powered insights.

Challenges

- Critical drilling and completions information was distributed across large volumes of daily well reports and operational records.
- Engineers spent significant effort reviewing reports to identify operational issues, trends, and performance insights.
- Manual analysis delayed decision-making and reduced responsiveness to field conditions.
- Valuable knowledge remained buried within unstructured operational documentation.

Our Solution

- Developed a GenAI-powered Well Reports Insights assistant to analyze drilling and completions reports using natural language interactions.
- Automated extraction of operational summaries, events, risks, and performance trends from daily reports.
- Enabled engineers to ask questions and receive contextual insights without manually reviewing extensive documentation.
- Delivered conversational search, report summarization, and drilling intelligence through a unified interface.
- Improved access to operational knowledge and accelerated insight generation across drilling programs.

Tech Stack

Generative AI | Natural Language Processing (NLP) | Operational Intelligence Platform | Conversational AI | Drilling & Completions Data Repository

Outcome Delivered

- Accelerated report analysis through AI-generated summaries and contextual insights.
- Reduced manual effort spent reviewing daily drilling and completions reports.
- Improved operational visibility into drilling activities, performance trends, and field events.
- Enabled faster decision-making through real-time access to critical operational intelligence.
- Unlocked knowledge from unstructured reports, improving information accessibility across teams.
- Enhanced collaboration through a shared, conversational interface for drilling intelligence

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Fortune 1000 Public Utility Company

Smart Restoration Predictor Agent

Agentic AI-powered outage intelligence delivering dynamic restoration predictions, improving customer communication, and enabling data-driven outage management

Challenges

- Estimated Restoration Times (ERTs) were often inaccurate and based on limited historical data.
- Manual estimation processes reduced operational efficiency during outage events.
- Customers received limited visibility into changing restoration timelines.
- Field condition changes were not reflected dynamically in outage communications.

Our Solution

- Designed a Smart Restoration Predictor Agent to continuously forecast outage restoration timelines.
- Leveraged historical outage data, real-time grid conditions, and crew progress updates to improve prediction accuracy.
- Enabled dynamic adjustment of ERTs as field conditions changed.
- Delivered real-time outage insights to support operational planning and customer communication.

Tech Stack

AWS Lambda | Amazon S3 | Amazon SageMaker | Python ML Models | Snowflake | Real-Time Outage Data Integration | Weather Data Enrichment | Crew & Outage Feature Engineering | Tableau Analytics & Reporting

Outcome Delivered

- 50%+ improvement in restoration time accuracy
- Real-time ERT updates improving customer communication
- Reduced manual estimation effort
- Increased trust in outage resolution timelines

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Fortune 1000 Public Utility Company

Proactive Outage Forecasting Agent

Agentic AI-powered outage forecasting enabling utilities to anticipate disruptions, improve preparedness, and proactively protect grid reliability

Challenges

- Outage management relied primarily on reactive response models.
- Limited ability to predict outages caused by weather and grid conditions.
- Large-scale outage events often resulted in inadequate operational preparedness.
- Resource deployment decisions were made with limited predictive visibility.

Our Solution

- Implemented a Proactive Outage Forecasting Agent to predict potential outages before occurrence.
- Leveraged weather patterns, grid vulnerabilities, and asset conditions to identify high-risk zones.
- Enabled early detection of outage risks and recommended preventive actions.
- Supported proactive planning and resource allocation through AI-driven forecasting

Tech Stack

AWS Lambda | Amazon S3 | Amazon SageMaker | Python ML Models | Snowflake | Real-Time Outage Data Integration | Weather Data Enrichment | Crew & Outage Feature Engineering | Tableau Analytics & Reporting

Outcome Delivered

- Enabled proactive outage management strategy
- Improved preparedness before major weather events
- Reduced outage occurrences in vulnerable grid zones
- Optimized resource pre-positioning

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Fortune 1000 Public Utility Company

Comprehensive Duration Analyzer Agent

Agentic AI-powered outage duration intelligence enabling accurate restoration planning, faster decision-making, and optimized resource allocation

Challenges

- Inaccurate outage duration estimates impacted restoration planning and customer communications.
- Limited data-driven prioritization led to inefficient response management.
- Multiple outage variables made restoration forecasting complex and difficult to manage.
- Misaligned planning often resulted in delays and operational inefficiencies.

Our Solution

- Developed a Comprehensive Duration Analyzer Agent to predict outage duration using multiple contextual parameters.
- Analyzed outage type, severity, location, weather conditions, and resource availability to improve forecast accuracy.
- Enabled data-driven prioritization of restoration activities across multiple outage events.
- Delivered intelligent outage planning insights to support faster and more effective restoration operations.

Tech Stack

AWS Lambda | Amazon S3 | Amazon SageMaker | Python ML Models | Snowflake | Real-Time Outage Data Integration | Weather Data Enrichment | Crew & Outage Feature Engineering | Tableau Analytics & Reporting

Outcome Delivered

25% reduction in average outage duration

Enabled data-driven prioritization of restoration efforts

Reduced delays caused by misaligned planning

Improved operational planning across multiple outages

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Fortune 1000 Public Utility Company

Crew Optimization & Simulation Agent

Agentic AI-powered workforce optimization enabling smarter crew deployment, faster outage response, and improved field productivity

Challenges

- Inefficient crew allocation impacted outage response effectiveness.
- Limited scenario planning capabilities hindered preparedness for large-scale outages.
- Poor utilization of field resources increased operational costs and response delays.
- Manual planning made it difficult to optimize crew size, skills, and routing strategies.

Our Solution

- Implemented a Crew Optimization & Simulation Agent to dynamically model outage scenarios and optimize crew deployment.
- Leveraged AI-driven simulation to determine optimal crew size, skill requirements, and dispatch strategies.
- Enabled intelligent routing and resource allocation based on outage conditions and operational priorities.
- Delivered scenario-based planning capabilities to improve response coordination and workforce utilization.

Tech Stack

AWS Lambda | Amazon S3 | Amazon SageMaker | Python ML Models | Snowflake | Real-Time Outage Data Integration | Weather Data Enrichment | Crew & Outage Feature Engineering | Tableau Analytics & Reporting

Outcome Delivered

Optimized crew allocation across outage incidents

Improved field productivity and response coordination

Reduced resource wastage & manual planning effort

Enabled scenario-based strategic planning for outages

25%
Increased in crew utilization

5X
Faster dispatch time

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Super Major Oil & Gas Company

Reimagining Pole Inspections with Vision AI

Transforming field inspections into intelligent, scalable asset monitoring

Challenges

- Manual pole inspections were **time-intensive, costly, and heavily dependent on field expertise,** limiting inspection coverage at scale.
- Inconsistent identification of defects across **poles, insulators, and crossarms** increased the likelihood of critical issues being missed.
- Limited visibility into early-stage asset degradation increased **outage risk, safety exposure, and potential operational losses.**

Our Solution

- Developed an **AI-powered drone inspection solution** using Computer Vision to automate the detection and classification of pole infrastructure defects from aerial imagery.
- Applied **object detection and segmentation models** to identify defects across poles, insulators, crossarms, and associated components.
- Integrated a **GenAI-based severity engine** to help assess detected defects and support maintenance prioritization.
- Established an **Azure-based MLOps ecosystem** to enable scalable model deployment, monitoring, and continuous improvement.
- Delivered insights through **web-based dashboards,** creating an enterprise view of asset condition to support predictive maintenance and proactive intervention.

Tech Stack

Inspection: DroneDeploy | **AI & Vision:** Computer Vision, Object Detection & Segmentation Models | **Cloud & Data:** Microsoft Azure, Azure ML, Azure Data Factory | **GenAI & MLOps:** GenAI Severity Engine, MLOps Platform

Outcome Delivered

60–70%
Faster inspections

10,000+
Poles covered at scale

80%
Defect detection accuracy

$66M
Estimated financial impact

50K BOE
Annual loss avoidance per business unit

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Fortune 500 oil and gas company in India

Transforming Industrial Safety with Vision AI

Enabling always-on safety intelligence across complex refinery operations

Challenges

- Monitoring worker safety across **400+ cameras** and extensive operational areas made manual surveillance increasingly challenging.
- **9 safety use cases running in parallel** required continuous monitoring and rapid identification of violations and incidents.
- The scale and complexity of refinery operations increased the risk of **critical safety events being missed through manual monitoring alone.**

Our Solution

- Deployed an **AI-powered video analytics platform** to process feeds from 400+ cameras and automate safety monitoring across the operational environment.
- Enabled **9 concurrent AI safety use cases,** including PPE compliance, intrusion, fall detection, collapsed-person detection, fire/smoke detection, and camera tampering.
- Delivered **real-time alerts and centralized dashboards** to accelerate visibility and response to critical safety events.
- Integrated **AI validation and digital evidence management** to support incident investigation, audits, and safety compliance.
- Built a **scalable architecture** designed to extend intelligent monitoring as operational requirements and site coverage grow.

Tech Stack

Vision AI: NVIDIA DeepStream, TensorRT-Optimized Computer Vision Models | **AI Validation:** Vision Language Models | **Infrastructure:** NVIDIA GPU Infrastructure | **Data & Deployment:** Kafka, Docker

Outcome Delivered

400+ Cameras monitored centrally	**9** AI-powered safety use cases
24×7 Automated safety monitoring	**Real-Time** Safety alerts & visibility

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Agentic AI

Enabling Multi-Agent Solutions

OVERVIEW

LTM

Agentic AI automates complex workflow, improves productivity, modernizes operations and delivers measurable business impact.

USE CASE Click on any of the below stories to explore the details.

- Audit.AI DocIntelligence
- Smarter Hazard Analysis
- Audit.AI – Material Recon Solution
- Audit.AI – Risk Analyzer
- Agentic AI-driven solutions for Energy
- Agentic AI for Smarter SNOW Ticket Mgmt
- Optimize Claims Substantiation
- TAG AI Assistant - Intelligent Terminal Ops
- Doc Processing agent - Financial Reconciliation
- Rates & Regulatory Intelligence Bot
- Legal Intelligence Bot
- Marketing Campaign Assistant
- Talent Acquisition AI Assistant
- AI-Powered Work Order Design Review
- AI-Powered Expense Audit Bot
- Procurement Compliance Bot
- Requisition Compliance Bot

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Super Major Oil and Gas Company

Audit.AI DocIntelligence

Enhancing Finance Audit Efficiency with
AI-Powered Data Management

Challenges

- Difficulty managing vast volumes of heterogeneous data from multiple sources (financial records, contracts, material data).
- Manual audit checks were time-consuming and increased the risk of errors.
- Existing data extraction tools included irrelevant or redundant information, complicating analysis.
- Inconsistent data relevance and quality impacting decision-making.

Our Solution

- Developed and implemented DocIntel, an AI-powered audit automation framework using Azure OpenAI.
- Automated data cleaning and management for finance audits, handling both structured and unstructured data.
- Integrated the solution seamlessly with existing client systems for easy configuration and monitoring.
- Enabled scalable, high-availability operations using Azure's cloud infrastructure.

Tech Stack

Python, Azure SDK | Azure Cloud Platform | Blob Storage, Azure functions, Azure OpenAI services, Azure SQL DB, Azure AI search, Azure Key Vault, API Management, GitHub | Visual Studio code (for Python and Azure functions), Azure Machine Learning Studio (for ML model development) | Scikit Learn, Azure Cognitive Services API, Azure Logic apps

Outcome Delivered

Achieved 100% automated document processing, eliminating the need for sampling and manual intervention

Increased audit coverage and accuracy, scaling from 25 to 100–1000 documents per audit

Improved data quality and completeness, supporting faster and more agile audit cycles

Freed up auditors to focus on insights and exceptions, strengthening risk detection and decision-making

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US Energy Basin Operator

Smarter Hazard Analysis with Agentic AI

Adaptive AI framework delivering real-time compliance, safety, and cost efficiency

Challenges

- Ensuring comprehensive and accurate hazard identification remains a challenge.
- Integrating JHA processes into daily operations without disrupting workflows is difficult.
- Keeping JHA processes aligned with new hazards and regulatory changes requires continuous effort.

Our Solution

- The solution involves utilizing advanced AI models to analyze historical JHA data and identify potential gaps in new submissions.
- Implemented an intelligent, adaptive agentic AI framework to power the JHA Gap Analysis Engine.
- Generated detailed reports on identified gaps, historical trends, and compliance status.

Tech Stack

Azure OpenAI Service | Azure Data Factory | Agentic AI | Azure Blob Storage | Azure DevOps

Outcome Delivered

Enhanced safety and compliance

Improved efficiency by reduction in manual effort and allowing foremen to focus on critical tasks

Significant cost savings with reduced risks of accidents

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Super Major Oil & Gas Company

Audit.AI – Material Recon Solution

Enhancing Material Mapping Accuracy

Challenges

- Difficulty managing & extracting data from inconsistent, un-structured, & diverse sources (vendor invoices, internal documents).
- Inconsistent naming, descriptions, & properties across documents make accurate data extraction and standardization challenging.
- Manual processes were time-consuming, error-prone, and resource-intensive.

Our Solution

- Developed an AI-powered solution for automated material mapping and reconciliation across diverse document sources.
- Automated detection of document types and templates, ensuring accurate extraction and mapping of materials.
- Generated comprehensive mapping reports, tagging materials and maintaining consistency across vendor and internal records.
- Provided an intuitive interface for auditors, simplifying review & approval.

Tech Stack

Programming: Python (ML models, Azure SDK, scripting), SQL | **Cloud and Data:** Azure Cloud Platform, Blob Storage, Functions, OpenAI Services, SQL Database, AI Search, Key Vault, API Management, GitHub | **Development Tools:** Visual Studio Code, Azure Machine Learning Studio | **Libraries & Integration:** Scikit Learn, Azure Cognitive Services API, Azure Logic Apps

Outcome Delivered

Automation enabled each auditor to save approximately six weeks per audit

Achieved annual savings of around 18 person-weeks previously spent on manual reconciliation and validation

Accelerated audit timelines and improved accuracy and consistency in data validation and reporting

Freed up auditor capacity to focus on deeper analysis and strategic insights

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Super Major Oil & Gas Company

Audit.AI – Risk Analyzer

AI-Driven Risk Analysis for Automated Compliance

Challenges

- Manual risk categorization and rating were time-consuming, inconsistent, and dependent on individual expertise.
- Large and growing volumes of structured and unstructured data from diverse sources were difficult to process consistently, leading to inefficiencies, errors, and delays.
- Existing processes relied heavily on manual effort from compliance analysts to collate, aggregate, & verify data, making the approach inefficient, hard to scale, & unsustainable as data volumes increased.

Our Solution

- Built a reusable Gen AI-powered component for automated data profiling, categorization, and risk rating.
- Leveraged natural language processing and historical data mapping to assign risk categories and ratings dynamically.
- Integrated the solution with existing systems for scalable, efficient, and proactive risk management.
- Automated the process of defining categories by learning from past data patterns.

Tech Stack

Programming: Python (ML models, Azure SDK, scripting), SQL (database queries, data management) | **Cloud and Data:** Azure Cloud Platform, Blob Storage, Functions, OpenAI Services, SQL Database, AI Search, Key Vault, API Management, GitHub, Azure Machine Learning Studio | **Libraries and Integration:** Scikit Learn, Azure Cognitive Services API, Azure Logic Apps

Outcome Delivered

Automated risk scoring & calibration, reducing manual effort & turnaround time from days to minutes

Delivered consistent, data-driven risk assessments across all audit findings

Saved over 1,400 person-days annually, enabling teams to focus on strategic analysis and remediation

Enhanced audit quality, coverage, & agility without increasing headcount

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iNXT Accelerator for EGUL industry

Agentic AI-driven solutions for Energy

Driving precision, productivity, and operational excellence

Challenges

- Manual, rule-based production processes were limiting operational efficiency, reducing throughput, and negatively impacting Overall Equipment Effectiveness (OEE).
- High scrap rates and quality variability driven by limited, labor-dependent defect detection and inspection accuracy were increasing costs and reducing sustainability.
- Lack of integrated human–machine collaboration resulted in fragmented monitoring, slower diagnostics, & delayed issue resolution across operations.

Our Solution

- Virtual line and digital twin for end-to-end process modeling.
- Vision AI for accurate material picking and fewer errors.
- Real-time monitoring to optimize quality and reduce waste.
- Precision & predictive AI for better punching accuracy & early failure detection.
- Agentic AI for instant quality checks and corrective actions.
- Unified data analysis for smarter, faster decisions to improve productivity, quality, and efficiency.

Tech Stack

Agentic AI systems for process automation and quality control | Digital twin technology for virtual line simulation | Vision AI for material handling and inspection | Predictive analytics for equipment health and maintenance | Real-time data integration & monitoring platforms

Outcome Delivered

5,000
hours/year saved through automation and process optimization

~99%
quality and availability with advanced AI-driven monitoring and control

70%
improvement in labor productivity through reduced manual effort and errors

Over USD
2Mn
annual ROI from cost savings, efficiency, and improved output

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Super Major Oil & Gas Company

Agentic AI for Smarter ServiceNow Ticket Management

Automate prioritization and routing, improving response times

Challenges

- Manual, inconsistent prioritization and categorization caused delays and misrouted tickets.
- Limited real-time visibility into recurring issues and potential incident spikes.
- Reactive operations hindered proactive planning & resource allocation.

Our Solution

- Embedded an AI-enabled workflow that triggers on ticket creation to analyze content, assign priority, and categorize it into predefined groups.
- Implemented auto-routing to the right teams, reducing misclassification rework.
- Enabled trend dashboards and predictive signals to identify recurring issues and forecast ticket spikes.
- Delivered measurable improvements in response time, ticket handling accuracy, and user satisfaction.

Tech Stack

Agentic AI integrated with ServiceNow workflows | AI Foundry's OpenAI models for automated priority & category assignment

Outcome Delivered

Faster resolution: Reduced incident resolution time by **30–50%** through AI-driven auto-prioritization

Lower manual effort: Cut manual ticket triage effort by **40–60%,** allowing teams to focus on high-value tasks

Proactive ops: Improved incident spike prediction accuracy by **25–40%,** enabling proactive resource planning and stability

Quality uplift: Improved routing accuracy to **90–95%** increased end-user satisfaction scores by **15–25%**

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Super Major Oil & Gas Company

Claimify.AI: Optimizes Claims Substantiation

Processing time reduced by 50%, Saving $144Mn

Challenges

- Time-consuming manual data search for claims substantiation.
- Inefficient, repetitive legal research processes.
- Difficulty in generating actionable insights from past substantiated claims.
- Limited decision-making capability and high operational costs due to lack of timely, data-driven insights.

Our Solution

- Implemented AI-based semantic search solution using an LLM to find previous claims data.
- Enabled accurate, context-aware search and evidence retrieval using AI/NLP.
- Provided legal analysts and corporate teams with an easy-to-navigate evidence repository.
- In-built design to improve search accuracy-based user interactions.
- Delivered actionable insights and improved decision support for corporate affairs attorneys with excel-like UI.

Tech Stack

AI/NLP | Power automate | Data lake | Azure AI

Outcome Delivered

$1.44Mn
in yearly savings approved

50%
reduction in claim processing time

9,600
business hours saved annually

600
claims processed annually with improved efficiency in the claim process

Improved productivity, insights generation, and decision-making

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Super Major Oil and Gas Company

TAG AI Assistant – Intelligent Terminal Operations & Support Copilot

Agentic AI-powered knowledge assistant enabling faster incident resolution, self-service support, and scalable terminal operations across a global network

Challenges

- Supporting 50+ terminals globally required rapid access to operational knowledge and support guidance.
- Critical information was scattered across SharePoint, ServiceNow, SOPs, and multiple systems.
- Manual searches and tribal knowledge increased incident resolution times and operational inconsistencies.
- Frequent L1-L2 escalations and lengthy onboarding created additional support overhead.

Our Solution

- Developed the TAG AI Assistant, an agentic AI-powered copilot for terminal operations and support teams.
- Leveraged enterprise knowledge sources to deliver conversational, role-based, and context-aware assistance.
- Enabled unified access to procedures, troubleshooting guides, and operational documentation.
- Automated incident guidance, routing, and escalation support to improve issue resolution.
- Established a scalable knowledge platform supporting terminal expansion, workforce enablement, and operational standardization.

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Tech Stack

Agentic AI | Generative AI | SharePoint | ServiceNow | Knowledge Management Platform | Role-Based Access Controls | Enterprise Support Automation

Outcome Delivered

Accelerated incident triage and resolution, reducing downtime and improving support responsiveness across terminal operations.

Reduced L1-to-L2 escalations through AI-driven guidance, self-service capabilities, and contextual troubleshooting support.

Enabled conversational knowledge access, delivering accurate and rapid answers from enterprise knowledge repositories.

Provided 24x7 **self-service support,** improving operational continuity and reducing dependence on specialist resources.

Streamlined onboarding and knowledge transfer, helping new support engineers become productive faster.

Established a scalable digital support model capable of supporting new terminals, facilities, and operational growth without proportional increases in support overhead.

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Super Major Oil and Gas Company

AI-Powered Intelligent Document Processing for Financial Reconciliation

Transforming financial reconciliation through intelligent document processing, accelerating data extraction, improving accuracy, and reducing manual effort at scale.

Challenges

- Thousands of credit and debit note documents arrived in diverse PDF and Word formats.
- Non-standard templates made data extraction complex and inconsistent.
- Manual processing increased effort, turnaround time, and data quality risks.
- Growing document volumes limited scalability and increased operational costs.

Our Solution

- Implemented an AI-powered Intelligent Document Processing (IDP) solution using Microsoft Copilot Studio.
- Created a unified extraction framework capable of handling multiple document formats and layouts.
- Leveraged OCR, AI-based extraction, and business-rule validation to automate critical data capture.
- Enabled scalable processing while maintaining consistency and accuracy across documents.
- Delivered a reusable, production-ready solution to streamline reconciliation workflows.

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Tech Stack

Microsoft Copilot Studio | Intelligent Document Processing (IDP) | OCR | AI-Powered Field Extraction | Business Rules Engine | Workflow Orchestration

Outcome Delivered

Automated processing of 1,000+ **documents per month-end cycle,** significantly increasing operational throughput.

Reduced manual effort by 60-70%, minimizing dependency on human validation and repetitive processing activities.

Improved processing turnaround time by 50-60%, accelerating reconciliation cycles and financial close activities.

Enhanced extraction accuracy and consistency, reducing reconciliation exceptions and improving overall data quality.

Delivered a production-ready solution within 2-3 days, enabling rapid business value realization and accelerated adoption.

Reduced operational costs through automation, improved productivity, and streamlined financial workflows.

Strengthened compliance and audit readiness through improved data reliability, standardization, and process governance.

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Fortune 1000 Public Utility

Rates & Regulatory Intelligence Bot

AI-powered regulatory intelligence assistant accelerating research, response generation, and filing preparation through instant access to historical regulatory knowledge

Challenges

- Manual regulatory research required significant effort to locate documents and analyze historical filings.
- Over 2,500 annual data requests created lengthy turnaround cycles and operational overhead.
- Response template creation and document retrieval relied heavily on manual effort.
- Limited access to historical context and precedents weakened regulatory response readiness.

Our Solution

- Developed a custom conversational AI assistant for Rates & Regulatory Affairs teams.
- Automated regulatory research, response generation, and report preparation workflows.
- Enabled intelligent search and summarization of historical filings, precedents, and supporting documentation.
- Automated template creation for recurring regulatory data requests.
- Integrated cloud-based publishing and archiving for streamlined document management.

Tech Stack

Front-end technologies: React, JavaScript, TypeScript, Tailwind CSS, CSS | **Backend Technologies:** AWS Services – Cloud Base (Lambda, Stepfunction, ECR, Glue, Sagemaker, AWS Amplify) | **Backend Technologies:** AWS AI Services (Bedrock (Model – Claude Sonnet 3.5 & Amazon Titan), Kendra (SharePoint Data source, S3 Data Source, WebCrawler Data Source) | **Backend Technologies:** AWS Security Services (Cognito, AI Gateway, WebSocket, Macie, Guardrail, System Manager (parameter store), Secret Manager) | **Database:** Snowflake, Dynamodb, SQL Server | **Cloud resources:** Azure (application management), Web App | **DevOps:** Jenkins, AWS CloudFormation.

Outcome Delivered

5% improvement in regulatory outcomes

$1Mn-$2Mn annual cost recovery enabled through improved regulatory positioning and filing quality.

Reduced template creation time from **10-15** minutes to seconds

Significantly reduced document search and research effort

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Fortune 1000 Public Utility

Legal Intelligence Bot

AI-powered legal intelligence solution accelerating case preparation through automated policy discovery, keyword identification, and evidence analysis

Challenges

- Manual identification of relevant keywords and reference policies was time-consuming and inefficient.
- Legal teams faced challenges locating applicable regulations and supporting documentation.
- Building strong legal cases required extensive research, leading to delays in legal proceedings.

Our Solution

- Developed an AI-powered legal intelligence engine to analyze case documents and supporting evidence.
- Automated identification of relevant keywords, policies, and regulatory references.
- Ranked keywords and references based on relevance and case context.
- Enabled faster legal research and evidence discovery through intelligent document analysis.

Tech Stack

Front-end technologies: React, JavaScript, TypeScript, Tailwind CSS, CSS | **Backend Technologies:** AWS Services – Cloud Base (Lambda, Stepfunction, ECR, Glue, Sagemaker, AWS Amplify) | **Backend Technologies:** AWS AI Services (Bedrock (Model – Claude Sonnet 3.5 & Amazon Titan), Kendra (SharePoint Data source, S3 Data Source, WebCrawler Data Source) | **Backend Technologies:** AWS Security Services (Cognito, AI Gateway, WebSocket, Macie, Guardrail, System Manager (parameter store), Secret Manager) | **Database:** Snowflake, Dynamodb, SQL Server | **Cloud resources:** Azure (application management), Web App | **DevOps:** Jenkins, AWS CloudFormation.

Outcome Delivered

- Reduced keyword identification time from days to under a minute.
- Reduced policy and reference research effort from 4+ hours to less than 1 hour.
- Accelerated case preparation
- Improved access to relevant policies and precedents

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AI-Powered Marketing Campaign Assistant

Conversational AI-powered marketing assistant enabling personalized campaign creation, faster audience targeting, and improved marketing productivity

Challenges

- Manual campaign creation and customer data retrieval were time-consuming and resource intensive.
- Marketing teams struggled to quickly identify the right audience and develop personalized content.
- Limited automation impacted campaign efficiency and creativity.
- Reliance on external resources increased execution costs and turnaround times.

Our Solution

- Developed a custom conversational AI assistant for marketing campaign planning and execution.
- Enabled real-time access to customer data through natural-language interactions.
- Automated creation of personalized campaign content and email drafts.
- Centralized customer insights and campaign intelligence through a unified interface.

Tech Stack

Front-end technologies: React, JavaScript, TypeScript, Tailwind CSS, CSS | **Backend Technologies:** AWS Services – Cloud Base (Lambda, Stepfunction, ECR, Glue, Sagemaker, AWS Amplify) | **Backend Technologies:** AWS AI Services (Bedrock (Model – Claude Sonnet 3.5 & Amazon Titan), Kendra (SharePoint Data source, S3 Data Source, WebCrawler Data Source) | **Backend Technologies:** AWS Security Services (Cognito, AI Gateway, WebSocket, Macie, Guardrail, System Manager (parameter store), Secret Manager) | **Database:** Snowflake, Dynamodb, SQL Server | **Cloud resources:** Azure (application management), Web App | **DevOps:** Jenkins, AWS CloudFormation.

Outcome Delivered

- Improved marketing productivity
- Accelerated campaign development with AI-generated personalized email drafts and marketing content.
- Enhanced campaign effectiveness
- Reduced dependency on external contractors

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Talent Acquisition AI Assistant

GenAI-powered recruitment assistant accelerating hiring workflows through automated job description creation, interview preparation, and candidate evaluation support

Challenges

- Creating job descriptions and interview questionnaires required significant manual effort.
- Recruiting teams spent considerable time tailoring hiring content based on candidate profiles and role requirements. Manual hiring processes increased turnaround times and reduced recruiter productivity.

Our Solution

- Developed a conversational AI assistant tailored for Talent Acquisition teams.
- Integrated with the Career Gallery portal to access live candidate and job data.
- Automated generation of role-specific job descriptions using multiple hiring inputs.
- Created interview question guides based on job requirements and candidate profiles.

Tech Stack

Front-end technologies: React, JavaScript, TypeScript, Tailwind CSS, CSS | **Backend Technologies:** AWS Services – Cloud Base (Lambda, Stepfunction, ECR, Glue, Sagemaker, AWS Amplify) | **Backend Technologies:** AWS AI Services (Bedrock (Model – Claude Sonnet 3.5 & Amazon Titan), Kendra (SharePoint Data source, S3 Data Source, WebCrawler Data Source) | **Backend Technologies:** AWS Security Services (Cognito, AI Gateway, WebSocket, Macie, Guardrail, System Manager (parameter store), Secret Manager) | **Database:** Snowflake, Dynamodb, SQL Server | **Cloud resources:** Azure (application management), Web App | **DevOps:** Jenkins, AWS CloudFormation.

Outcome Delivered

- Reduced candidate hiring cycle by up to 3 days
- Improved Talent Acquisition team productivity
- Enabled faster creation of job descriptions and interview guides.
- ~$200K annual savings through greater hiring efficiency and process optimization

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AI-Powered Work Order Design Review

Automating design validation through AI-driven review intelligence

Challenges

- Manual work order design reviews were time-consuming and resource intensive.
- Review standards varied across reviewers, resulting in inconsistent outcomes.
- Prolonged approval cycles delayed project execution and delivery timelines.

Our Solution

- Developed an AI-powered review assistant to automatically validate work order sketches and designs.
- Applied rule-based intelligence to assess designs against predefined engineering standards and checklists.
- Standardized the review process through automated validation and compliance checks.
- Enabled faster review cycles while improving consistency and accuracy.

Tech Stack

Front-end technologies: React, JavaScript, TypeScript, Tailwind CSS, CSS | **Backend Technologies:** AWS Services – Cloud Base (Lambda, Stepfunction, ECR, Glue, Sagemaker, AWS Amplify) | **Backend Technologies:** AWS AI Services (Bedrock (Model – Claude Sonnet 3.5 & Amazon Titan), Kendra (SharePoint Data source, S3 Data Source, WebCrawler Data Source) | **Backend Technologies:** AWS Security Services (Cognito, AI Gateway, WebSocket, Macie, Guardrail, System Manager (parameter store), Secret Manager) | **Database:** Snowflake, Dynamodb, SQL Server | **Cloud resources:** Azure (application management), Web App | **DevOps:** Jenkins, AWS CloudFormation.

Outcome Delivered

Reduced design review time from 30 minutes to 4 minutes per design

Accelerated project delivery through faster approval cycles and increased review throughput

Improved design quality and consistency

Reduced rework and review effort

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AI-Powered Expense Audit Bot

Automating expense compliance and audit workflows through AI-driven policy validation

Challenges

- Manual expense audits were difficult to scale across growing transaction volumes.
- High risk of non-compliant expense claims being approved and processed.
- Policy validation relied heavily on manual review, increasing effort and inconsistency.

Our Solution

- Developed an AI-powered expense audit assistant to automatically validate employee expense claims.
- Embedded reimbursement rules and policy guidelines into an intelligent review framework.
- Automated compliance checks across submitted expense claims before approval.
- Enabled policy-driven auditing and exception identification at scale.

Tech Stack

Front-end technologies: React, JavaScript, TypeScript, Tailwind CSS, CSS | **Backend Technologies:** AWS Services – Cloud Base (Lambda, Stepfunction, ECR, Glue, Sagemaker, AWS Amplify) | **Backend Technologies:** AWS AI Services (Bedrock (Model – Claude Sonnet 3.5 & Amazon Titan), Kendra (SharePoint Data source, S3 Data Source, WebCrawler Data Source) | **Backend Technologies:** AWS Security Services (Cognito, AI Gateway, WebSocket, Macie, Guardrail, System Manager (parameter store), Secret Manager) | **Database:** Snowflake, Dynamodb, SQL Server | **Cloud resources:** Azure (application management), Web App | **DevOps:** Jenkins, AWS CloudFormation.

Outcome Delivered

- 100% of expense claims up to $7K audited automatically
- 90%+ accuracy in identifying non-compliant expense submissions
- Improved policy adherence across employee reimbursement programs
- Reduced manual audit effort

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AI-Powered Procurement Compliance Bot

Automating purchase order audits through AI-driven policy validation

Challenges

- Manual PO audits covered only 1–2% of total purchase orders.
- High risk of non-compliant POs being approved and processed.
- Policy violations often created downstream supply chain and operational disruptions.

Our Solution

- Developed an AI-powered procurement review assistant to automatically audit purchase orders against procurement policies and business rules.
- Embedded policy controls into an intelligent validation framework for real-time compliance checks.
- Automated PO review and exception detection prior to approval and processing. Enabled scalable procurement governance through continuous, policy-driven auditing.

Tech Stack

Front-end technologies: React, JavaScript, TypeScript, Tailwind CSS, CSS | **Backend Technologies:** AWS Services – Cloud Base (Lambda, Stepfunction, ECR, Glue, Sagemaker, AWS Amplify) | **Backend Technologies:** AWS AI Services (Bedrock (Model – Claude Sonnet 3.5 & Amazon Titan), Kendra (SharePoint Data source, S3 Data Source, WebCrawler Data Source) | **Backend Technologies:** AWS Security Services (Cognito, AI Gateway, WebSocket, Macie, Guardrail, System Manager (parameter store), Secret Manager) | **Database:** Snowflake, Dynamodb, SQL Server | **Cloud resources:** Azure (application management), Web App | **DevOps:** Jenkins, AWS CloudFormation.

Outcome Delivered

100%
of purchase orders audited automatically

90%+
accuracy in identifying non-compliant purchase orders

Reduced procurement risk

Minimized downstream supply chain disruptions

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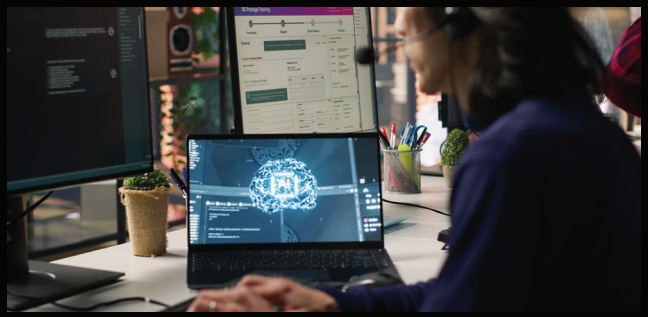
Fortune 1000 Public Utility

AI-Powered Requisition Compliance Bot

Automating requisition reviews through AI-driven policy validation



Challenges

- Low-risk and low-value requisitions lacked capacity for manual review.
- Policy violations could pass undetected, increasing compliance risk.
- Unchecked requisitions created potential downstream procurement and operational issues.

Our Solution

- Developed an AI-powered requisition review assistant to automatically validate purchase requisitions against business rules and policies.
- Embedded compliance checks into an intelligent review framework for consistent evaluation.
- Automated requisition auditing regardless of risk level or value.
- Eliminated manual reviews for low-risk requisitions while maintaining policy compliance.

Tech Stack

Front-end technologies: React, JavaScript, TypeScript, Tailwind CSS, CSS | **Backend Technologies:** AWS Services – Cloud Base (Lambda, Stepfunction, ECR, Glue, Sagemaker, AWS Amplify) | **Backend Technologies:** AWS AI Services (Bedrock (Model – Claude Sonnet 3.5 & Amazon Titan), Kendra (SharePoint Data source, S3 Data Source, WebCrawler Data Source) | **Backend Technologies:** AWS Security Services (Cognito, AI Gateway, WebSocket, Macie, Guardrail, System Manager (parameter store), Secret Manager) | **Database:** Snowflake, Dynamodb, SQL Server | **Cloud resources:** Azure (application management), Web App | **DevOps:** Jenkins, AWS CloudFormation.

Outcome Delivered

640+ hours saved annually through reduced manual review effort.

Improved requisition audit accuracy through automated policy validation.

Enhanced compliance coverage across all purchase requisitions.

Reduced labor costs by eliminating manual checks for low-risk transactions.

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Core AIOps

Operational Excellence

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OVERVIEW

Core AI Opsleverages AI to enhance IT operations through intelligent monitoring, automated incident management, predictive insights, and service optimization. By combining AI, enterprise data, and operational workflows, organizations can reduce downtime, improve service reliability, accelerate issue resolution, and deliver a more efficient support experience across the enterprise.

USE CASE Click on any of the below stories to explore the details.

- AI-Powered Monitoring-as-a-Service
- ResolvAI: Accelerating Incident Resolution
- Transforming Order-to-Cash with Copilot Knowledge Assistant
- Veeam Knowledge Hub: AI-Powered Answers at Scale
- GHCP-Powered Automation for Identity Remediation & Test Validation
- Veeam Infra Inventory: AI-Powered Instant Insights
- Accelerating SDLC efficiency
- Accelerating Transition with Co-Pilot
- NotifAI: Real-Time Pipeline Alerts for Market-Ready Trading
- Modernizing Audit Data Analytics with SSIS-to-Synapse Migration
- Accelerating Knowledge Access with CoPilot NMS agent

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Super Major Oil and Gas Company

AI-Powered Monitoring-as-a-Service (MaaS) Transformation for Enterprise Observability

Modernizing enterprise monitoring through AI-powered observability, delivering significant cost savings and operational resilience

Challenges

- Fragmented on-prem monitoring tools created siloed visibility and operational inefficiencies.
- Limited observability, integrations, and inconsistent CMDB data impacted monitoring accuracy.
- High infrastructure overhead and decentralized support increased costs and complexity.
- Absence of AI-Powered Monitoring-as-a-Service capabilities led to reactive incident management and limited automation.
- Rising licensing, hosting, and support costs hindered operational maturity.

Our Solution

- Consolidated disparate monitoring tools into a unified SaaS-based MaaS platform.
- Established a single-pane observability ecosystem across enterprise infrastructure and applications.
- Deployed Edwin AI for alert correlation, anomaly detection, predictive analytics, and automated response.
- Implemented intelligent log analytics for large-scale event correlation and noise reduction.
- Integrated with enterprise IT operations ecosystems and enabled persona-based dashboards.
- Automated topology discovery and dependency mapping for real-time operational visibility.

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Tech Stack

LogicMonitor SaaS Platform | Edwin AI (Agentic AI-Powered Monitoring-as-a-Service) | Monitoring-as-a-Service (MaaS) | ITSOM Integration | Automated Discovery & Topology Mapping | Intelligent Log Analytics | Observability APIs

Outcome Delivered

31% **reduction in annual monitoring operating expenses** through consolidation and optimization of the enterprise monitoring ecosystem.

46% **reduction in migration and transformation costs,** accelerating modernization while minimizing operational disruption.

Eliminated on-premises hosting costs by transitioning to a scalable SaaS-native observability platform

Simplified vendor and contract management by replacing multiple monitoring agreements with a unified service model.

Enabled AI-powered operations through proactive incident management, intelligent alert correlation, anomaly detection, and predictive analytics.

Enhanced operational visibility with persona-driven dashboards supporting faster, data-driven decision-making across leadership and operations teams.

Improved business agility through an as-a-service consumption model that scales monitoring capabilities based on evolving enterprise requirements.

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American Multinational Corporation

ResolvAI: Accelerating Incident Resolution with GenAI

Cuts MTTR by 40%, boosts CSAT by 2X, & delivers 95% accurate AI-driven recommendations for faster recovery

Challenges

- Fragmented knowledge ecosystem and repetitive troubleshooting. Manual, slow, and resource-intensive incident triaging and resolution. Lack of systemic learning loops and real-time feedback. Integration complexity across diverse technology stacks. Frequent SLA breaches and high operational overhead.

Our Solution

- Implemented ResolvAI for contextual ingestion, AI-powered analysis, and workflow automation.
- Enabled seamless integration with Microsoft 365, Power Automate, JIRA, and ServiceNow.
- Automated ticketing, approval workflows, and real-time collaboration via Teams.
- Developed a growing RAG-based knowledge base for systemic learning and faster resolution.
- Introduced multi-agent collaboration and advanced prompt engineering for future-ready operations.

Tech Stack

AI/GenAI: GPT-4o | **Automation:** Microsoft Power Automate | **Collab:** MS Teams, SharePoint | Monitoring & Reporting: Power BI | **ITSM :** JIRA, SNOW

Outcome Delivered

40% Reduction in Mean Time to Resolution (MTTR)

30–40% Cost savings by reducing manual effort and support overhead

2X Boost in user satisfaction CSAT: 5.8/6

150+ AI-generated recommendations in production with 95%+ precision

High adoption and engagement on Teams Copilot interface

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Global Chemical Producer

Transforming Order-to-Cash with Copilot-Powered Knowledge Assistant

Cut resolution and dev time by 40% and improves SLAs and BLAs

Challenges

- No consolidated repository/process map to reference prior O2C enhancements and variants. Significant time was wasted uncovering existing configurations during requirement reviews and support.
- Root-cause analysis for L3 incidents is slow, affecting resolution SLAs and user experience.
- Risk of duplicate effort and rework during project estimations.

Our Solution

- Curated and structured 25 years of O2C enhancements into a unified, searchable repository indexed knowledge base.
- Built a Copilot-enabled chatbot to deliver process variants, configuration details, and reuse recommendations.
- Embedded L3 support accelerators: incident triage prompts, troubleshooting flows, and quick root-cause identification.
- Implemented governance to avoid duplicate configurations and streamline project estimations.
- Retrieval-augmented generation (RAG) for precise variant/configuration lookups.

Tech Stack

Microsoft Copilot + Azure OpenAI (GPT-4) | RAG Architecture | Azure Cognitive Search (Vector DB) | SAP O2C Knowledge Assets | Azure Integration Services | Enterprise Security & Governance

Outcome Delivered

Faster decisions: Chatbot delivers instant access to 25+ years of O2C process variants & configurations, cutting resolution & development time by ~40%

Reduced rework: Identifies reusable configurations, avoiding unnecessary analysis and duplication

Support acceleration: Assists L3 teams with frequent issues, troubleshooting guidance, and quick root-cause paths

Operational outcomes: 100% document processing & Saved 1,400+ person-days annually

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Super Major Oil and Gas Company

Veeam Knowledge Hub: AI-Powered Answers at Scale

Cuts search time by 15–20%, ensures zero data exposure and accelerates IT operations

Challenges

- Engineers spent excessive time searching for answers across disparate sources.
- Manual knowledge retrieval increases operational delays.
- Lack of access-controlled search and contextual filtering made historical O2C knowledge access prone to leakage of sensitive customer, pricing, and configuration data.
- Scaling knowledge access for multiple teams was challenging.

Our Solution

- Built a Copilot-powered enterprise Q&A platform using Azure OpenAI and RAG architecture to deliver verified responses.
- Centralized and curated operational knowledge by ingesting approved runbooks, KBs, SOPs, and incident resolutions from Veeam's internal repositories.
- Implemented strict role-based access control and data segregation to ensure only authorized users can retrieve sensitive information.
- Integrated seamlessly with Veeam's operational systems and workflows, enabling contextual, natural-language Q&A within existing support and operations tools.
- Supported auditability and compliance by linking every AI response back to source documents.

Tech Stack

CoPilot AI engine for natural language processing

Outcome Delivered

~15–20%
Time saving by reducing manual knowledge search

Zero risk
for sensitive data exposure

Supports multi-team and enterprise-wide deployment with centralized, access-controlled knowledge delivery

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Super Major Oil and Gas Company

Veeam Infra Inventory: AI-Powered Instant Insights

Reduced lookup effort and query time by 80%

Challenges

- Manual queries for infrastructure data are slow and inefficient
- High effort required for manual lookups across disparate systems.
- Limited compliance visibility and traceability.
- Operational overhead due to time-consuming processes.

Our Solution

- Built an AI-powered infrastructure inventory assistant that abstracts infrastructure data access behind a conversational interface.
- Integrated the assistant with Excel-based inventories &
- ServiceNow CMDB to unify infrastructure data from multiple systems.
- Implemented a structured data access layer to retrieve OS, IP, DNS, license, vendor, & warranty information from authoritative sources.
- Enabled role-based access and end-to-end audit logging to ensure full traceability and compliance for all queries & responses.
- Deployed the solution within existing IT operations workflows, eliminating the need for manual lookups across disparate tools.

Tech Stack

AI chatbot engine with natural language processing | Integration with Excel and SNOW CMDB | Secure data management and audit logging

Outcome Delivered

Reduces query time from ~5 minutes to under 1 minute

Cuts manual lookup effort by 80%

Enhances compliance visibility with fully traceable audit logs

Lowers operational over head by an estimated 25%

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Super Major Oil and Gas Company

Accelerating SDLC efficiency

Gen AI-powered automation and rapid delivery excellence

Challenges

- The client needed a robust and scalable automation & reporting framework.
- Operations were spread across multiple legacy systems and manual processes.
- Fragmented and manual access to infrastructure data, spread across Excel files, CMDB, and multiple operational systems.
- High effort and delays in responding to routine infra queries, due to dependence on manual lookups and subject-matter experts.

Our Solution

- Embedded GitHub Copilot into the modernization SDLC to standardize GenAI-assisted delivery across agile pods.
- Created reusable Copilot accelerators (prompt library + coding instructions/standards) to drive consistent code generation and refactoring.
- Operationalized legacy code understanding & documentation to speed up business-logic extraction and produce engineering-ready artifacts.
- Integrated security and code quality into the flow by aligning refactored code to modern frameworks and SAST scan requirements.
- Standardized DevOps setup using reusable CI/CD templates and Ansible role generation for repeatable deployments.

Tech Stack

GHCP | Azure | SQL | NET | C#

Outcome Delivered

80%
Reduction in codebase stabilization time

40%
Reduction in effort for boilerplate and CRUD logic

25%
Improvement in performance

High stakeholder satisfaction via real-time feedback loops

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Canadian Multinational Company

Accelerating Transition with Co-Pilot

Streamlining processes, enhancing governance and delivering operational excellence

Challenges

- Manual tracking of transition activities and reporting required significant effort.
- Meetings and action plan tracking were time-consuming, with a risk of missing key items.
- Manual ticket analysis was inefficient, high-effort, & prone to delays.

Our Solution

- Implemented TransEdge (AI-powered LTIM tool / accelerator) to automate & streamline AMS deal transition tracking & reporting.
- Deployed Co-Pilot to automate meeting documentation, action item tracking, and ticket analysis.
- Enabled real-time dashboards for risk flagging, governance, and proactive problem management.
- Delivered significant reductions in manual effort, improved accuracy, and enhanced operational visibility.

Tech Stack

TransEdge: LTIMindtree's AI-powered transition platform | **Co-Pilot:** AI-driven automation for meeting notes, action items and ticket analysis | AI **Dashboards:** Real-time insights and summaries for governance and problem management

Outcome Delivered

TransEdge platform cut 50% of effort in knowledge transfer by requiring only SME-driven customization focus KT

AI dashboards flagged risks early, minimizing tracking effort and reducing manual reporting

Co-Pilot auto-generated approximately 50% of governance notes, streamlining documentation & review

5 months of ticket analysis completed in 1 hour, saving 250 hours of manual effort and improving accuracy

Early detection of recurring issues and trends, better resource allocation, and enhanced visibility

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American Multinational Corporation

NotifAI: Real-Time Pipeline Alerts for Market-Ready Trading

AI-powered monitoring cuts latency to seconds, preventing downtime-related revenue loss and enabling instant decision-making

Challenges

- Pipeline notices often appear on operator portals before email alerts, leading to missed market opportunities.
- Traditional processes lack real-time monitoring, proactive alerts, and instant dissemination.
- High-volume data pipeline monitoring complex & resource-intensive.
- No instant feedback mechanism makes action validation and response difficult.

Our Solution

- Implemented NotifAI to automate real-time monitoring of pipeline portals deliver precise, actionable notifications trading teams.
- Enabled AI-powered, near-instant alerts delivered directly to traders through Microsoft Teams using automated web intelligence.
- Deployed persistent, autonomous monitoring to reduce risk exposure and safeguard trading capital.

Tech Stack

Custom-built AI solution on Microsoft Power Platform | Near real-time web scraping of operator portals | AI-driven alerting & continuous monitoring | Teams integration for instant, actionable notifications

Outcome Delivered

Real-time advantage: NNear-instant alerts enable same-minute trader response, preventing losses caused by multi-minute delays

AI-powered alerting: 100% automated alerts delivered via Microsoft Teams, eliminating manual monitoring and notification delays

Operational agility: Captures trading opportunities before price swings occur, preventing costly delays

Risk mitigation: Avoids losses like the recent $250,000 missed opportunity caused by a three-minute delay

Enhanced decision-making: Reduces decision latency from minutes to seconds, enabling market-speed execution during price-sensitive events

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Super Major Oil and Gas Company

Modernizing Audit Data Analytics with SSIS-to-Synapse Migration

Achieve 60% faster encryption and saving 450+ hours monthly on QA

Challenges

- Outdated Infrastructure: Current data setup relies on legacy technology with limited scalability.
- Database Constraints: Hosted on-prem, restricting modernization and efficient scaling.
- Aging ETL Layer: Built on SSIS 2016, lacking advanced orchestration, monitoring, and cloud integration.
- Operational Impact: Limitations hinder automation, flexibility, and adoption of modern data engineering practices. Difficult to support evolving business and analytics requirements.

Our Solution

- Migrated database from on-premises IaaS SQL Server to PaaS SQL environment, enabling scalability & reducing infrastructure overhead.
- Automated month-end activities using Azure Synapse pipelines, improving efficiency and reliability.
- Leveraged GitHub Copilot to accelerate code migration, enhance documentation, fix syntax issues, and implement Python-based data testing for robust validation and streamlined development.

Tech Stack

Azure Synapse | Azure SQL (PaaS) | GitHub Copilot | Python Testing | Ansible CI/CD | SSIS (legacy) | SQL Server (on-prem)

Outcome Delivered

60% Reduction in development time for encryption and decryption code

8–9 Hours/month saved through automation of month-end activities

450–500 Hours/month eliminated in manual testing for a 4TB database

6-month Reduction in overall manual testing efforts

On-prem server eliminated, reducing infrastructure overhead

Enabled CI/CD deployments using Ansible, simplifying support and improving agility

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Super Major Oil and Gas Company

GHCP-Powered Automation for Identity Remediation & Test Validation

Saves USD 40K+ costs and accelerated delivery by 30%

Challenges

CAI Remediation:

- CAI (account identity) deprecation impacted 10+ custom apps and ~22K DB records, requiring large-scale updates and migration.
- Manual DB updates error-prone, risking data integrity across applications.
- Writing and validating scripts for thousands of records was tedious and time-consuming, slowing remediation efforts.

UAR Test Data & Validation:

- 120 applications required UAR test files for 1H and 2H 2025, creating significant preparation effort.
- Manual test data creation risked missed scenarios & inconsistent coverage.
- Row-by-row validation by control performers was inefficient, leading to long validation cycles and delays.

Our Solution

- Created a utility in .NET using Copilot to generate test data files and validate records. The validation tool provides details on the error and the error record.
- Implemented utility to bulk replace existing CAIs from SQL DB as part CAI replacement effort.
- Using GitHub Copilot, migrated app database attachments to another database without manual writing of scripts/ETL.

Tech Stack

NET Framework | GitHub Copilot | SQL Server | Stored Procedures | Azure Data Factory | Validation utility | Test Data Generator

Outcome Delivered

USD
40,000+
Cost savings

45%
Productivity gains
(faster time to market)

Data quality automated with
in-built AI accelerators

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Super Major Oil and Gas Company

Accelerating Knowledge Access with Copilot-Powered NMS Agent

Cut ticket resolution time by 50% and improve SLA compliance with AI-driven SOP automation

Challenges

- Manual, time-consuming management and investigation of SharePoint site collections during archiving and onboarding.
- Limited visibility into site purpose, document relevance, & contextual relationships without deep familiarity.

Our Solution

- Implemented a Copilot-based SharePoint Agent to serve as a single, governed interface for accessing operational and application knowledge.
- Indexed and curated existing SharePoint knowledge bases and application repositories, making approved SOPs, functional guides, and technical documents AI-searchable.
- Configured role- and persona-based response logic to tailor answers for different user groups (e.g., MSP teams, operations, support).
- Enabled natural-language Q&A with source-grounded responses, ensuring answers are derived only from validated content.

Tech Stack

Azure OpenAI | SharePoint | Microsoft 365 Copilot | Azure Bot Service | Azure Cognitive Search | Power Automate Azure Functions

Outcome Delivered

~50%
Reduction in MTTR

40%
reduction in manual site investigation

Faster Onboarding & Archiving: through streamlined workflows

Enhanced User Experience with simple and intuitive interface

Role-Based Guidance: with persona-centric responses

Improved Accuracy & Compliance: through consistent documentation

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It’s time to
Outcreate