



# AI in Construction

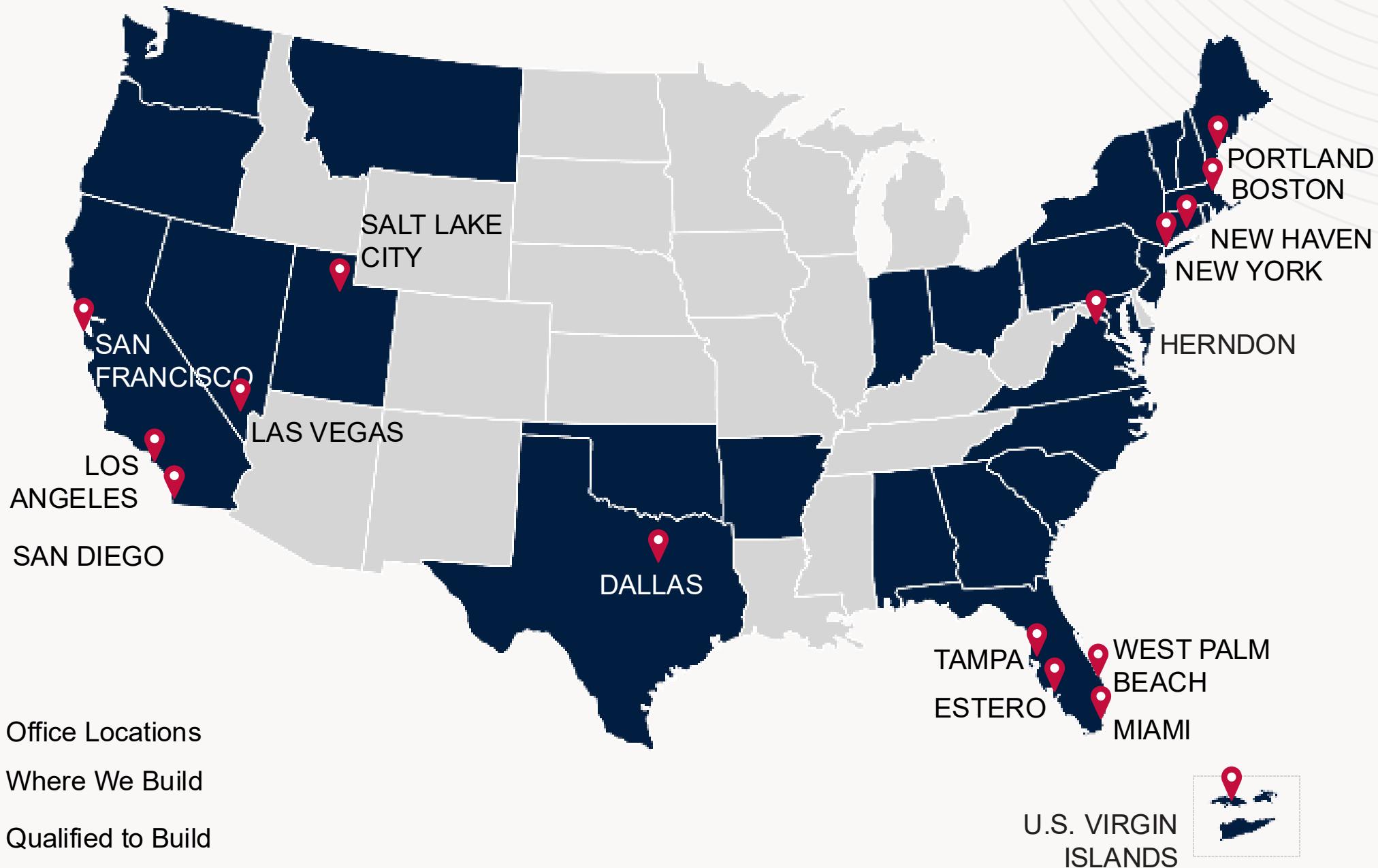
Turning Data into Smarter Decisions

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# Suffolk – an Introduction



## Sectors

AFFORDABLE HOUSING

ENTERTAINMENT

HOSPITALITY

OFFICE

ASSISTED LIVING

HEALTHCARE

K-12

RESIDENTIAL

DISTRIBUTION

HIGHER EDUCATION

LIFE SCIENCES

RETAIL

17 OFFICES

35 STATES

18 SECTORS

43 YEARS  
FOUNDER LED

3,300 EMPLOYEES  
NATIONWIDE

\$7.2B 2025 ANNUAL  
REVENUE

# Agenda

- 01. Different waves of AI, associated use cases**
- 02. Implementation - How we have captured value**
- 03. Agentic AI – the potential in front of us**
- 04. Organizing for impact – a perspective**

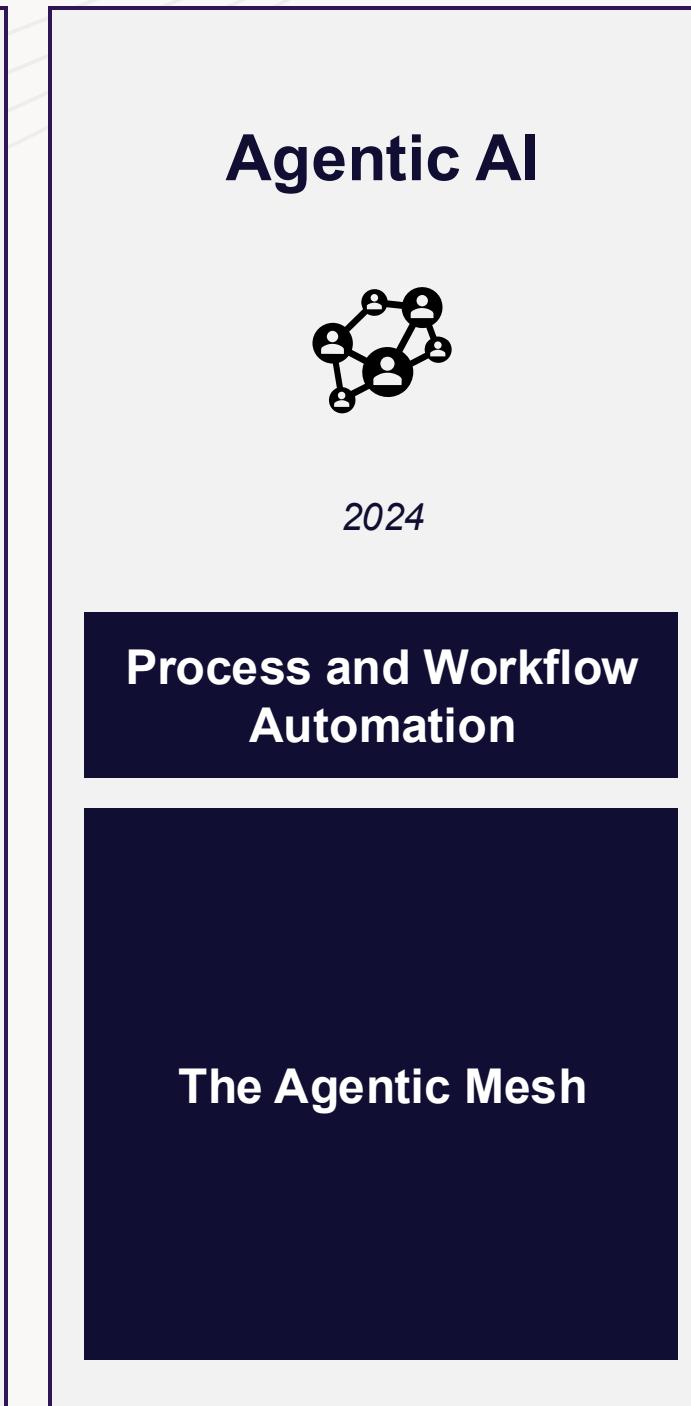
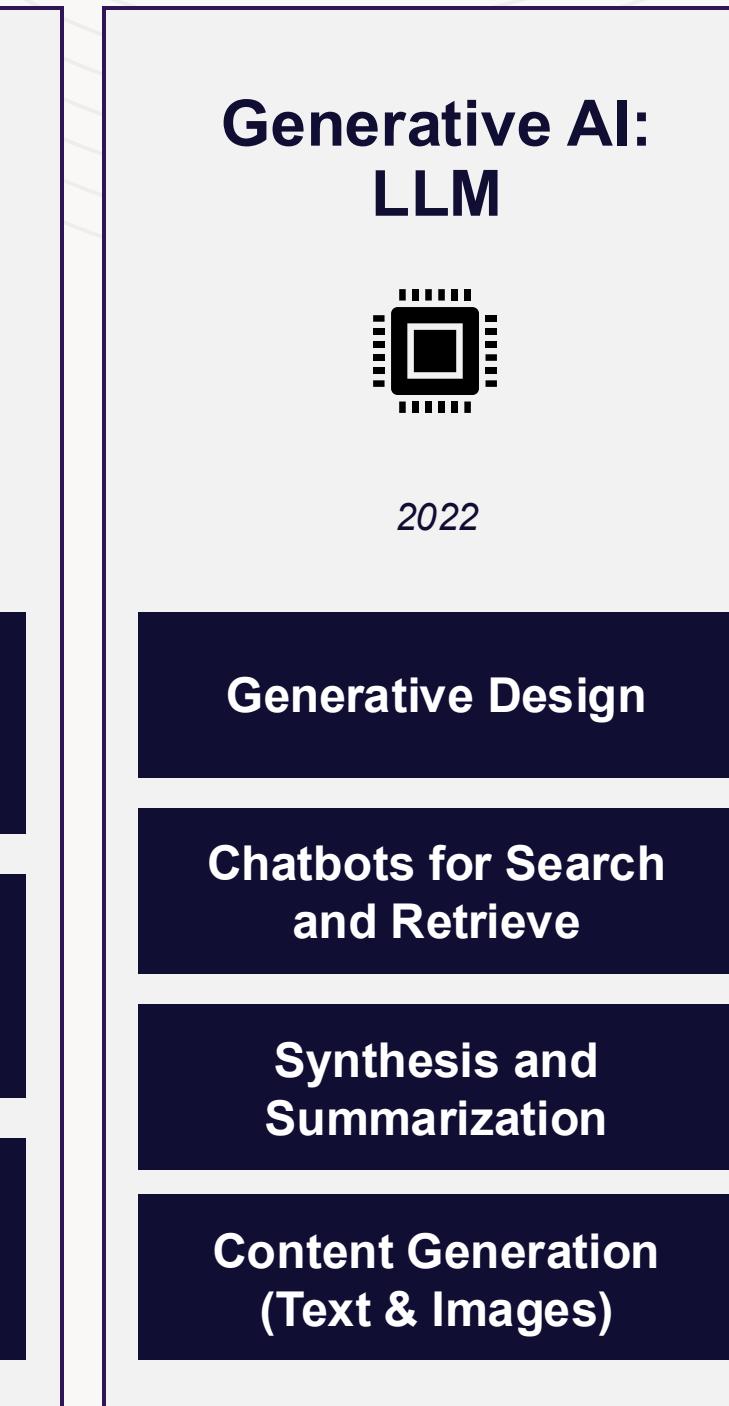
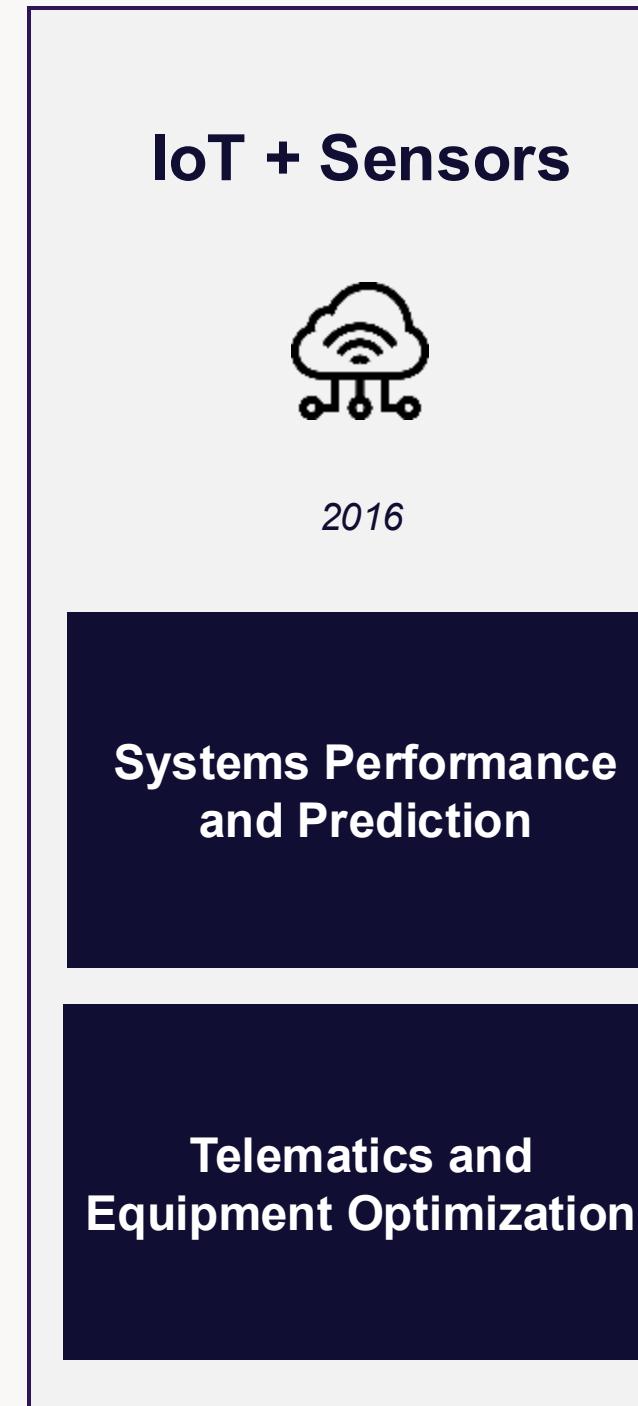
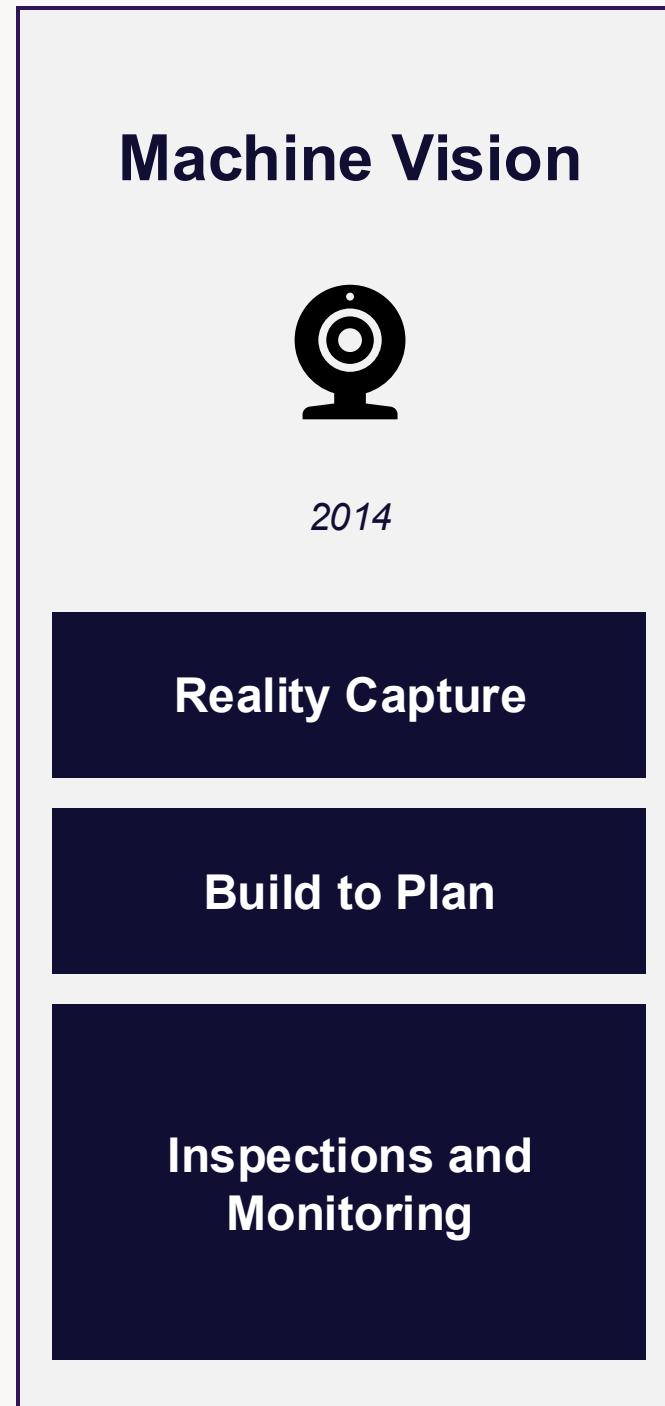
# Different Waves of AI

How it has evolved



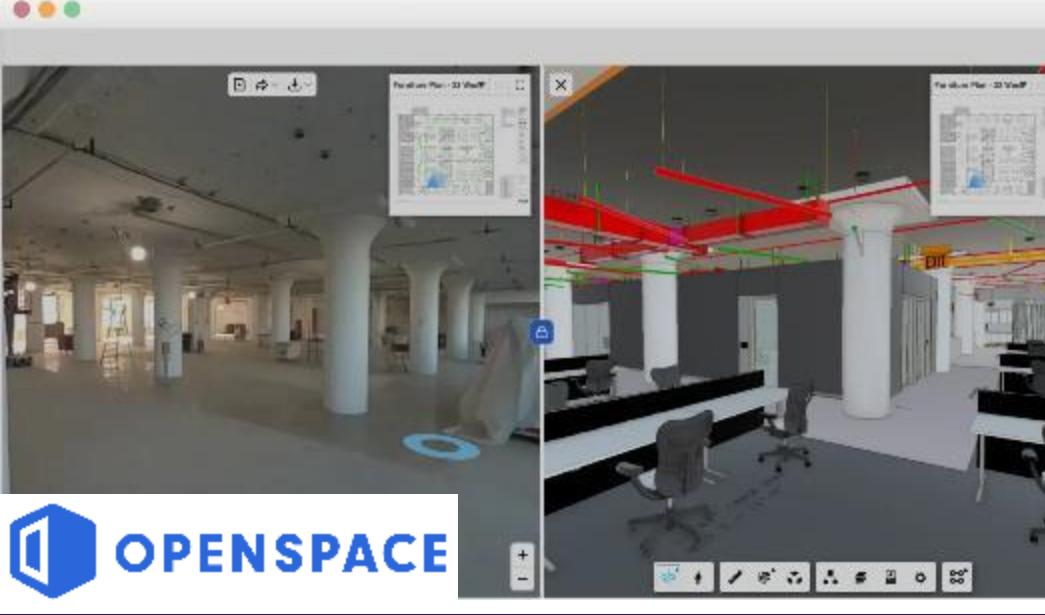
WALDORF ASTORIA, NY

# Different Waves of AI



# Machine Vision and IoT

**360° Reality Capture**



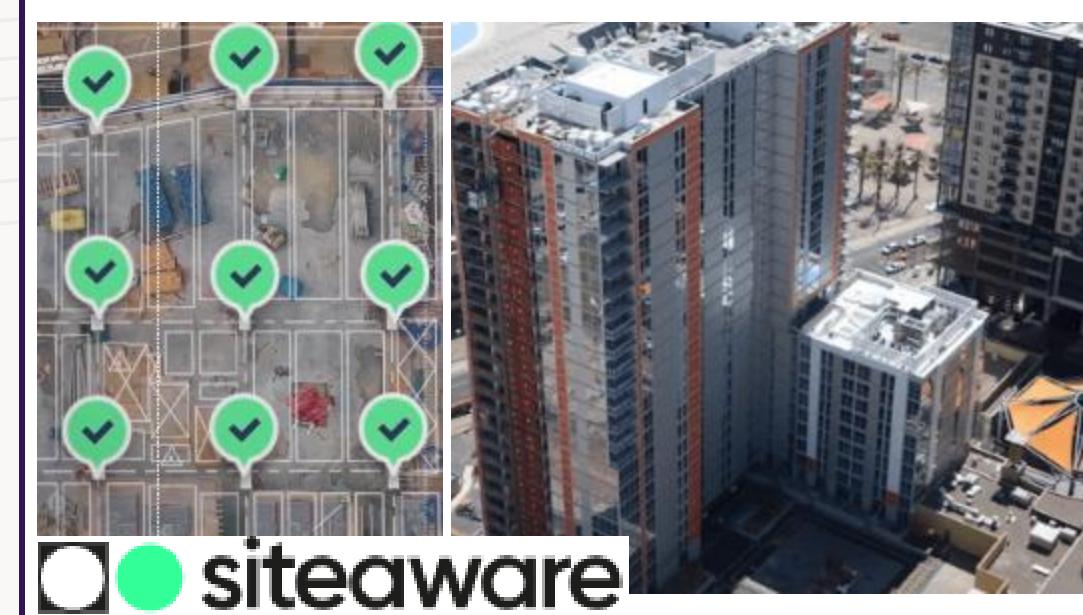
**OPENSPACE**

**Reality Capture: Automated Surveying**



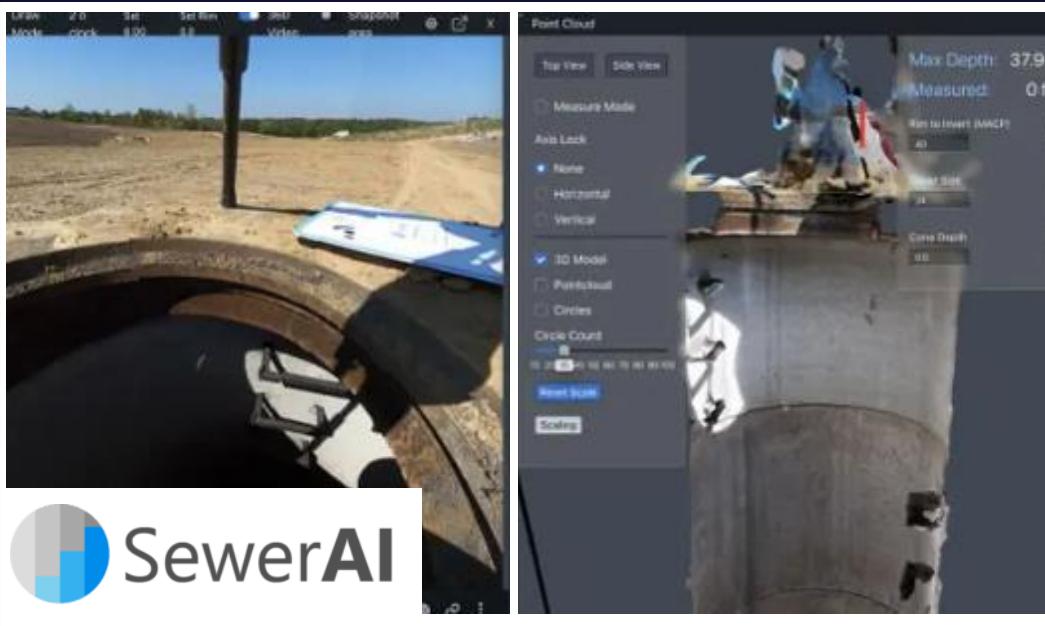
**AIRWORKS**

**Build to Plan**



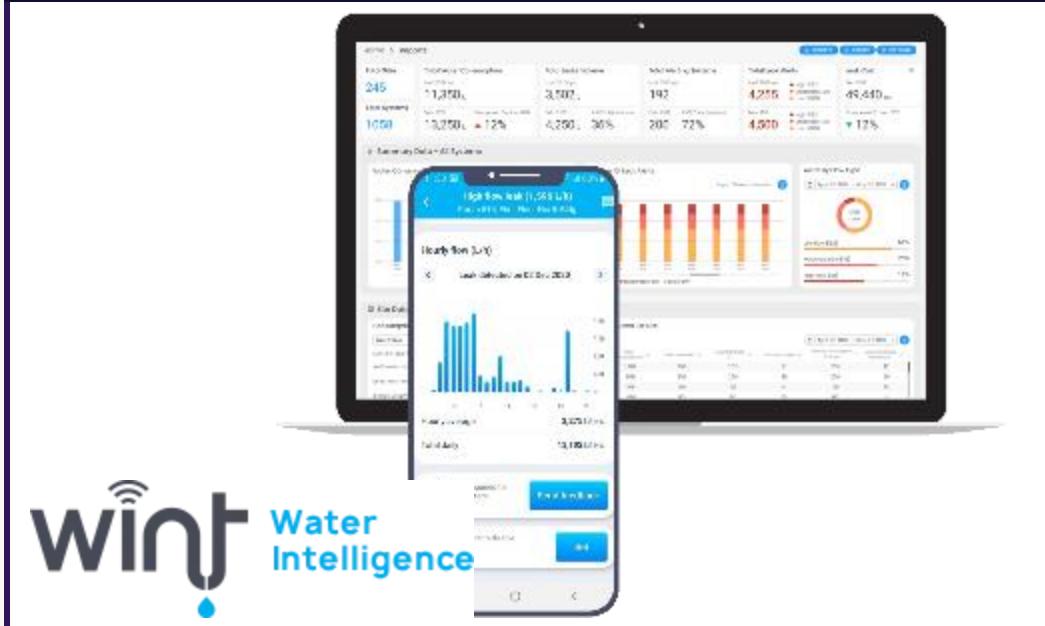
**siteaware**

**Inspections and Monitoring**



**SewerAI**

**Systems Performance: Water Leak Mitigation**



**WINT Water Intelligence**

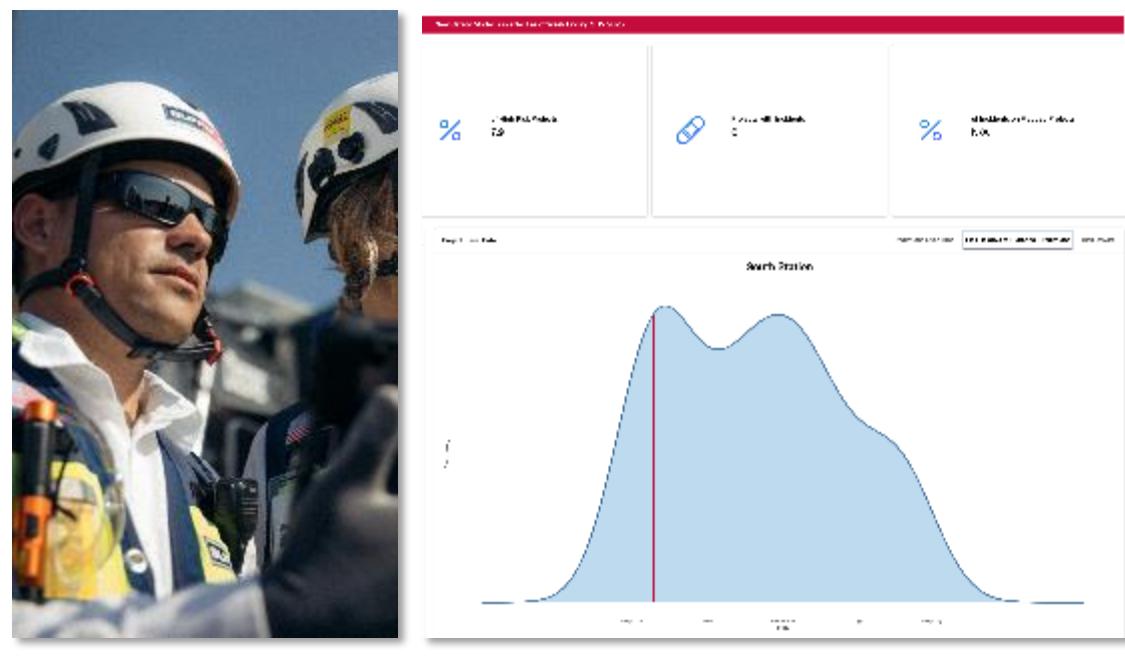
**Systems Performance: HVAC**



**Thalo labs**

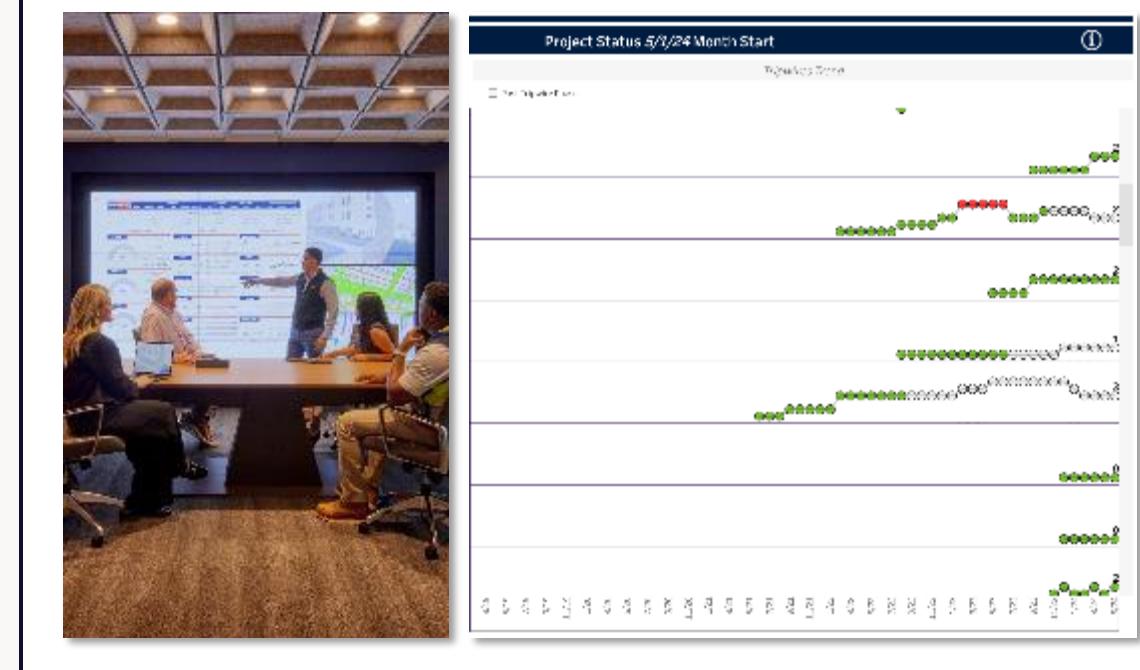
# Predictive Analytics

### SUFFOLK Safety



The software interface includes three data cards: 'Safety Index' (75%), 'Fall Risk' (2%), and 'Standard Deviation' (10%). Below these is a chart titled 'Safety Index' with a blue bell curve and a red vertical line indicating a threshold.

### SUFFOLK Tripwires



The software interface shows a 'Project Status 5/1/24 Month Start' dashboard with a Gantt chart. The chart displays multiple project phases and tasks, with colored dots representing progress and a legend for 'Dynamically Tracked' and 'Historical' data.

### nPlan Schedule



The nPlan interface features a 'From Text to Schedule' feature. It includes a 'Resource Allocation' table, a 'Task List' with descriptions and due dates, and a 'Gantt Chart' showing the timeline and dependencies for the project tasks.

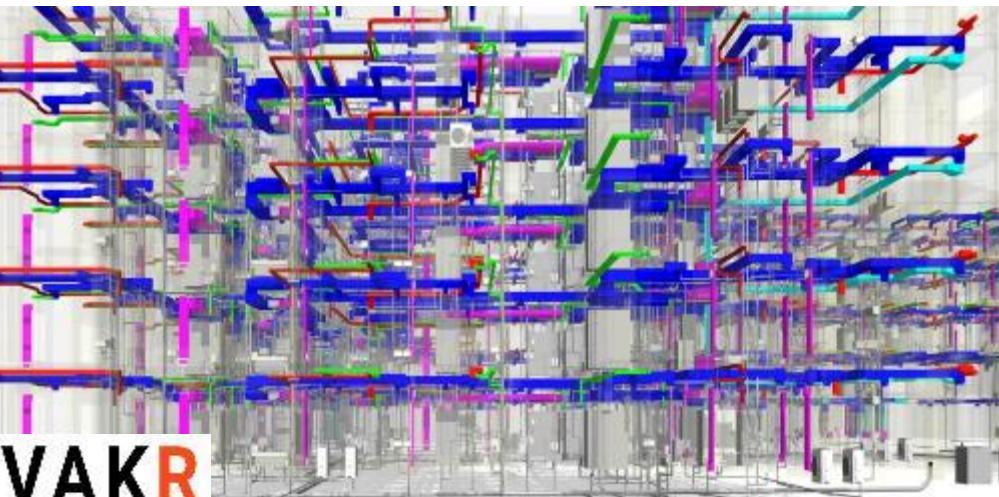
Predicting safety risk on a project based on both static and dynamic factors

Predicting margin erosion risk on a project based on staffing, early project progress, project type, etc.

Predicting likelihood of completing project on time based on large database of actualized schedules

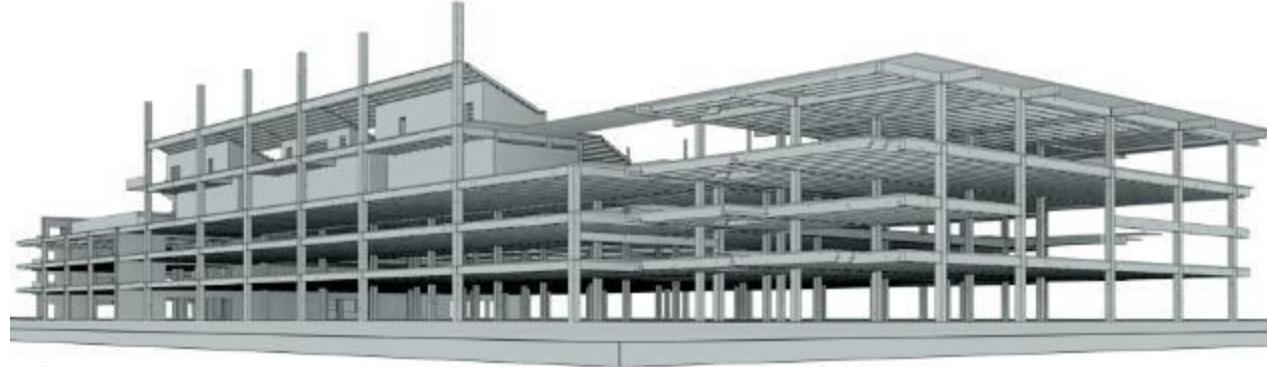
# LLMs and Agents

**Gen Design for MEP**



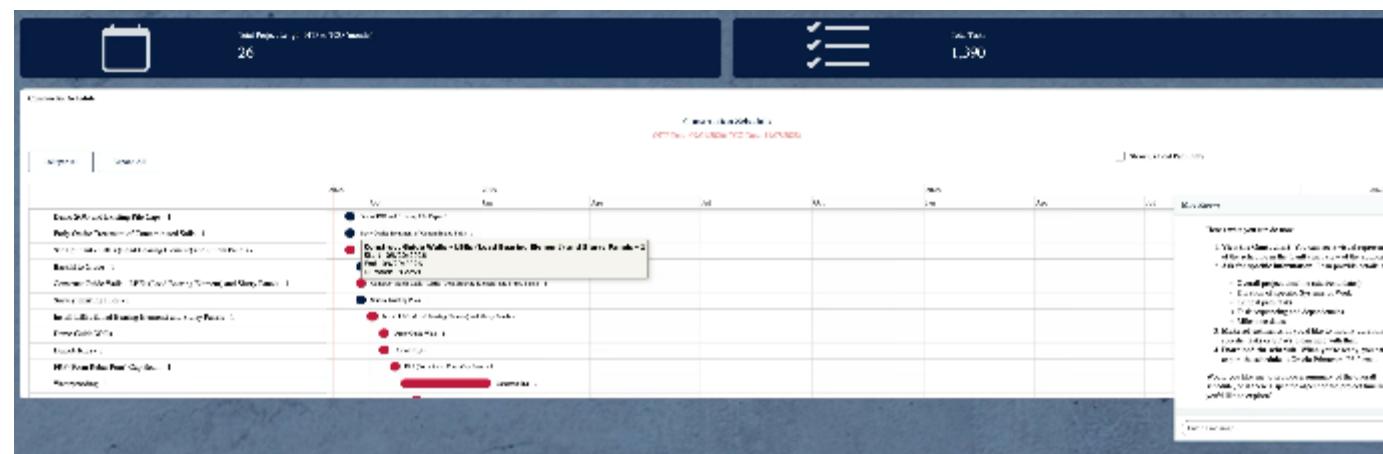
**HVAKR**

**Gen Design for Structural**



**GENIA**

**Schedule AI**



**HVAKR**

**Pursuits**

You 11:08 AM  
Find me proposals that talk about geothermal wells

SuffolkAI 11:08 AM  
[Somerville Public Safety Building\\_RFP 22-03\\_SUFFOLK\\_TECHNICAL.pdf](#) - 2022  
The proposal discusses the addition of geothermal wells on Parcel B before it is turned into a public park. It mentions the installation of 31 geothermal wells at the Boston University Center for Computing & Data Sciences project, detailing the challenges faced due to space constraints and the need for deeper wells to achieve the required heating/cooling capacity. The document highlights the importance of the geothermal system for climate action goals and the strategies used to mitigate disruption during installation.

SuffolkAI 11:08 AM  
[Diman Regional Voc-Tech High School\\_Non Price Proposal\\_Suffolk.pdf](#) - 2022  
The proposal discusses geothermal wells in the context of a project for a 19-story building, where 31 geothermal wells, each 1,500 feet deep, were drilled to achieve the expected heating/cooling capacity. The document highlights the importance of locating the wells outside the building footprint to minimize impact on deep foundation excavation activities. Additionally, it mentions a case study of NewBridge on the Charles, which utilizes a large geothermal heating and cooling system with 408 wells.

# LLMs and Agents: Planning

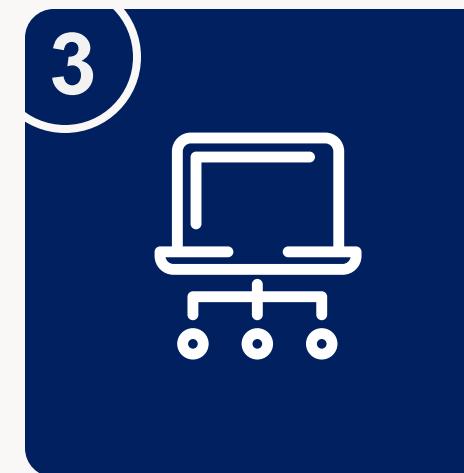
Schedule AI agent **automates the complex task** of schedule creation



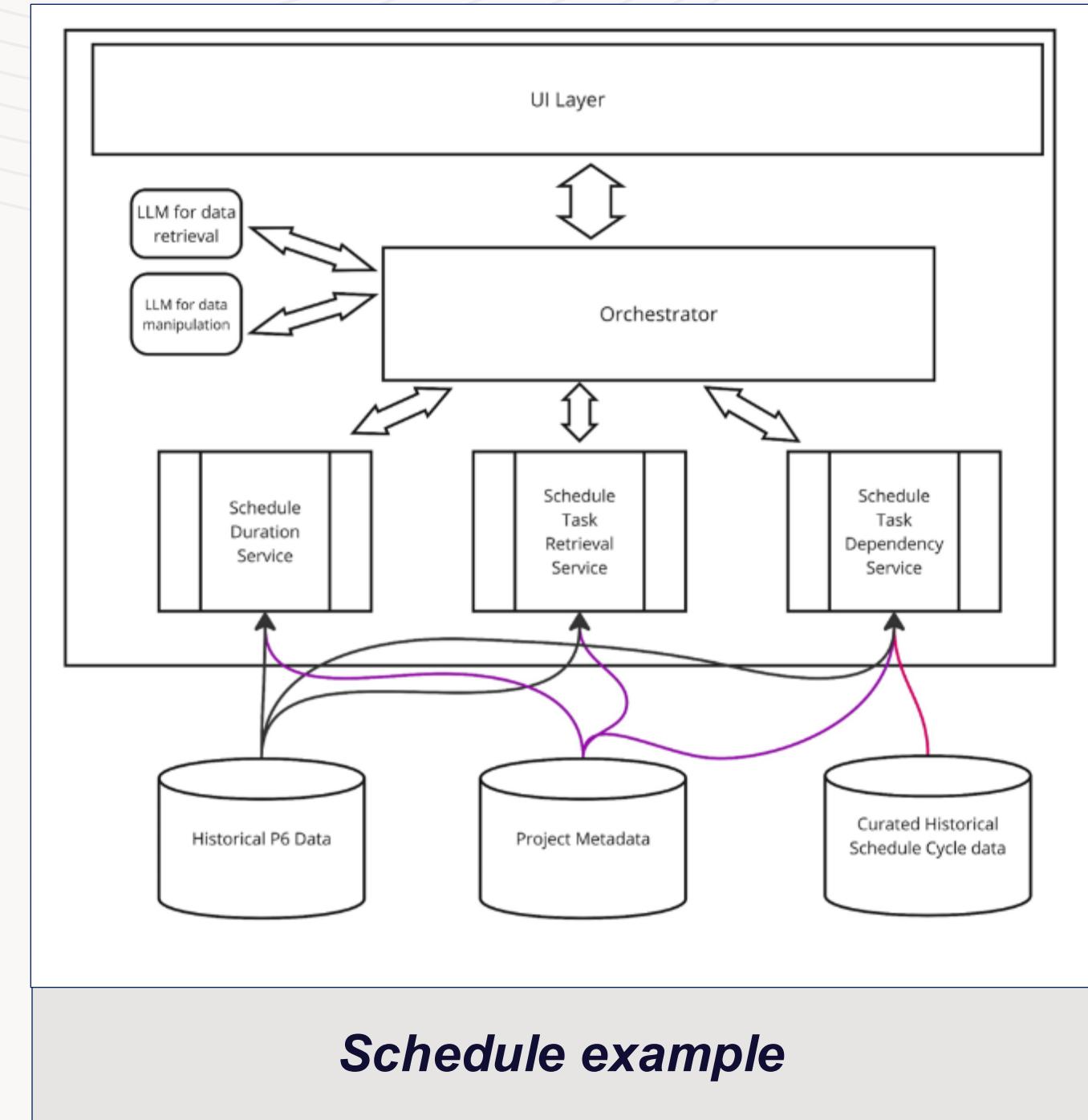
Directed by natural language or by available estimate to **do the work** and to **make changes**



Handles multiple scenario and different AI models under the hood: **both predictive and generative**



Connects to upstream (project estimate, carrying design) to **change according to design**



# Implementation

How we have captured value

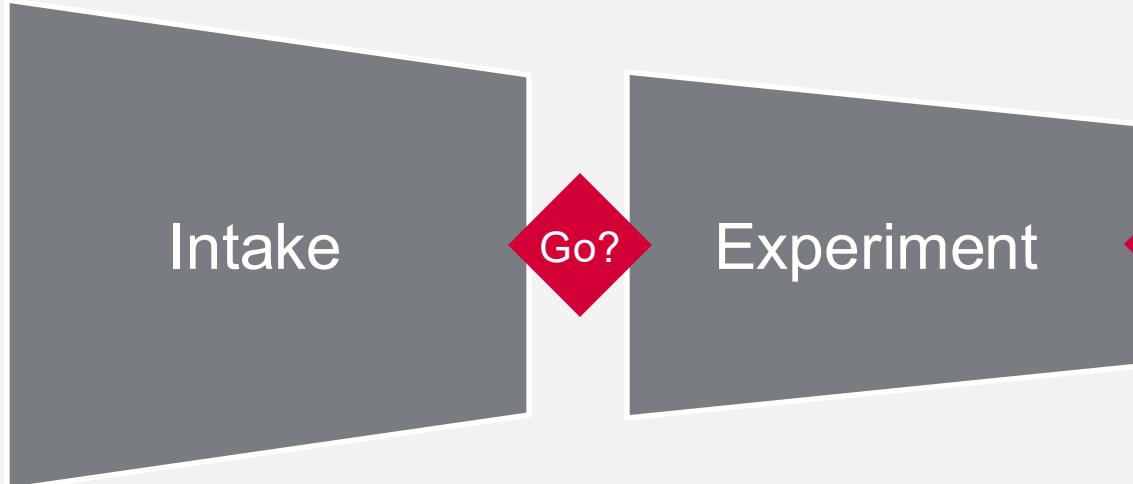


REGENERON EXPANSION, NY

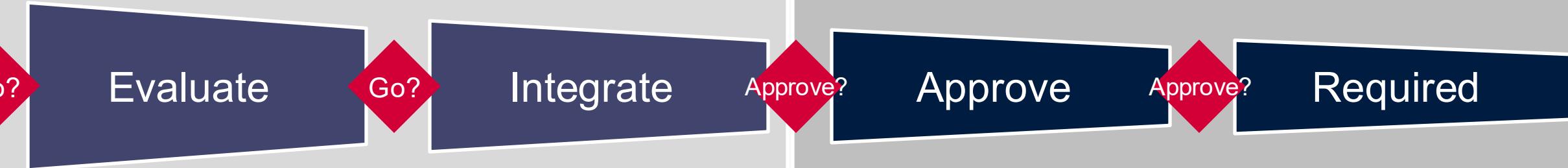
# Piloting and scaling partners: The Innovation Funnel

A systematic process is necessary to drive from experiment to requirement

## Test for desirability and feasibility in industry



## Test for viability and scalability within company operations



## Embed within company operations toolkit



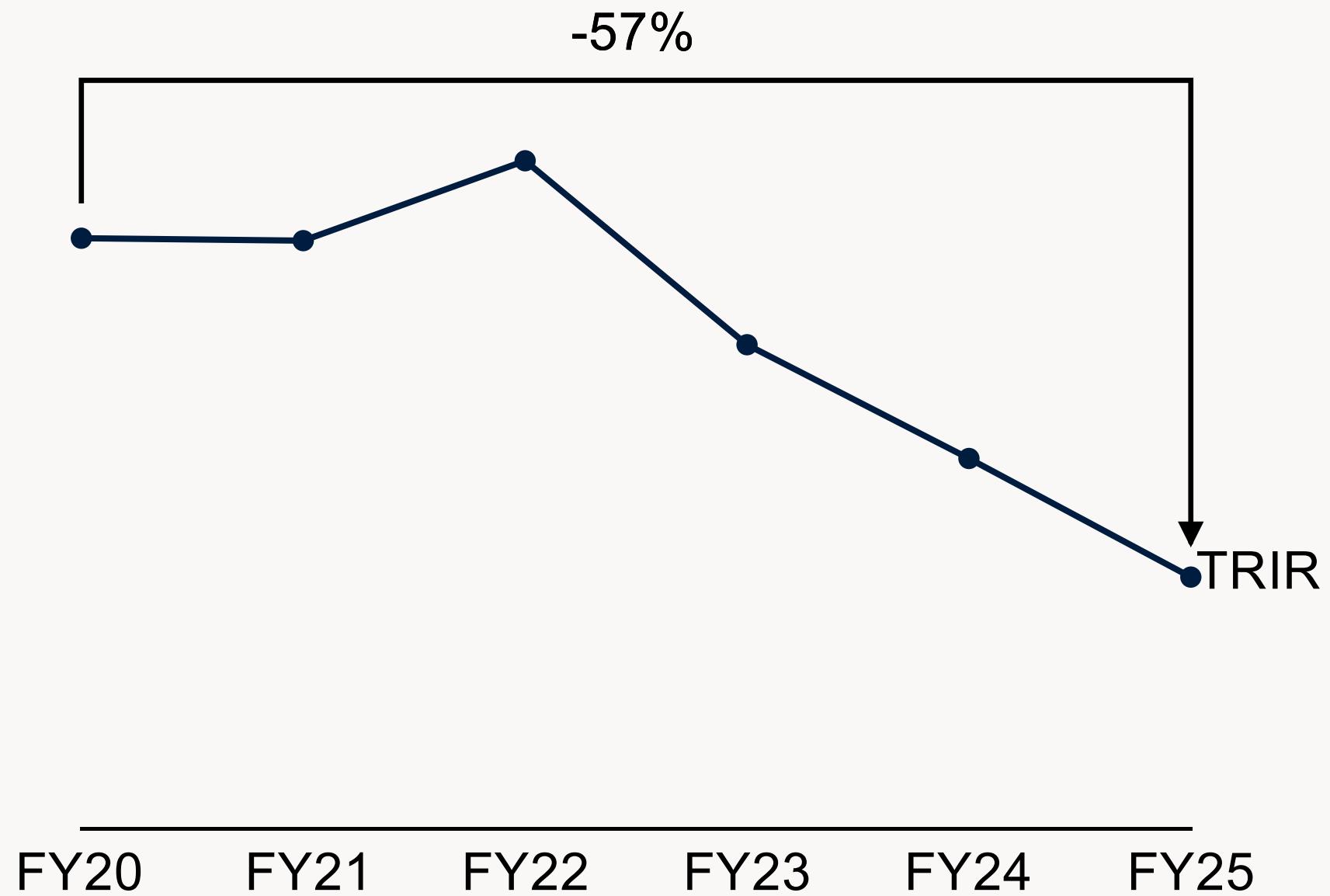
- Experimental pilots in a few projects with strong positive feedback and ROI (risk management, less rework, access project status through the cloud, etc.)

- Evaluation and validation of OpenSpace technical architecture with cybersecurity and IT standards

- Expansion to multiple regions and projects to vet solution and confirm benefits are scalable
- Standardization of OpenSpace across all projects

# Predictive Analytics: Embedding insights for better decisions and action taking

A safety example

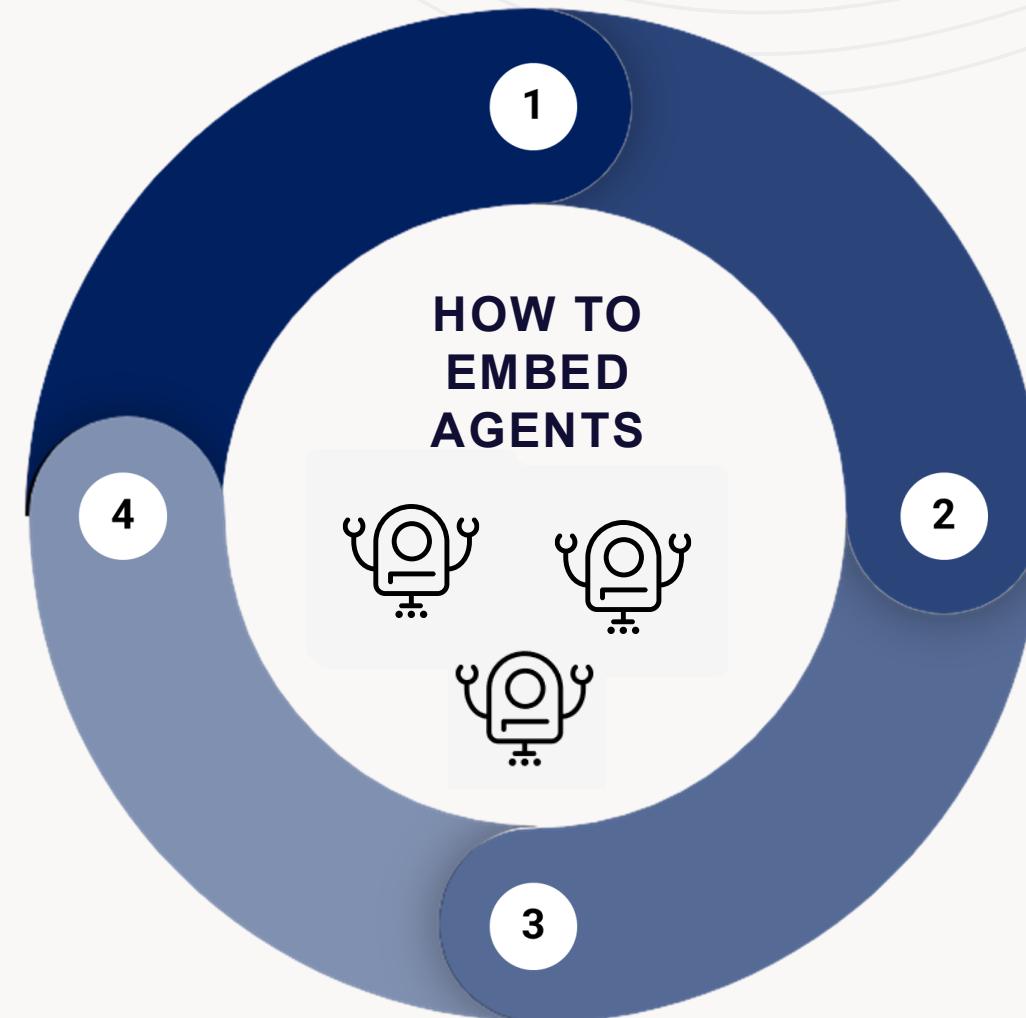
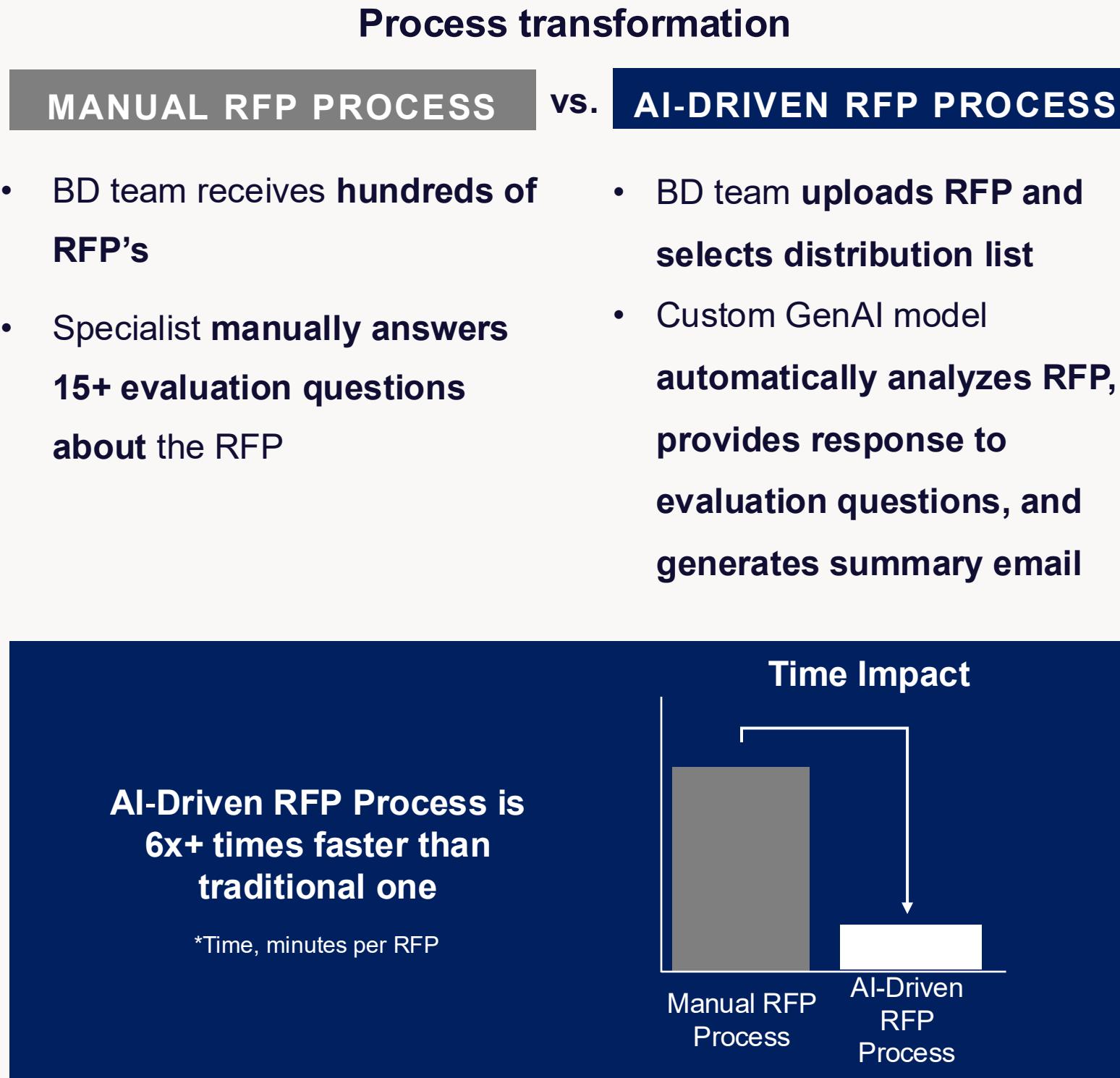


## HOW TO EMBED PREDICTIVE INSIGHTS

- ✓ Fully embed analytics into the safety management system (e.g., project teams discuss proven drivers of safety in management meetings)
- ✓ Support safety staffing decision, following high risk
- ✓ Embed analytical insights into KPIs and SOPs (e.g., observations to trade hours ratio)
- ✓ Define a playbook based on outcomes of predictive model, e.g., what action to take if a project flags a high risk
- ✓ Close the loop: track action effectiveness, learn, and refresh features/models regularly

# LLMs and Agents: RFP agent

Pursuits example



# Agentic AI

The potential in front of us



TERMINAL E, BOS

# The Built Environment: A Unique Moment

Systemic pressures and secular growth drivers set the stage for technology adoption across the backbone of the global economy (real estate, construction, infrastructure)

## Structural Challenges



**Severe Labor Shortage**



**Cost is Greater than Value**



**Supply Chain Fragility**



**Aging Infrastructure**



**Decarbonization & Resiliency**



**Productivity Stagnation**

## Secular Drivers



**Significant Housing Shortfall**



**Infrastructure Investment Wave**



**AI-Driven Data Center Buildout**



**Reshoring of Manufacturing**



**Healthcare & Bio Pharma**



**Grid Modernization & Electrification**

# The Future of AI is Agentic

Entire operating models are being reimagined



Agents have the potential to **automate complex business processes**, combining autonomy, planning, memory and integration



Unlocking the full potential of agentic AI requires more than plugging agents into existing workflows. It calls for **reimagining those workflows from the ground up** — with agents at the core



A new AI architecture paradigm — **the agentic mesh** — is needed



**The prize is cost and time**



Sources:

HBS article: "How Gen AI can disrupt SaaS – and Change the Companies that Use It", by Deep Nisha and Nitin Nohria, May 2025

McKinsey article: Seizing the Agentic AI advantage, a CEO playbook to solve the genAI paradox and unlock scalable impact with AI agents

SUFFOLK



# Organizing for Impact

A perspective



GILEAD CANCER RESEARCH FACILITY, CA

# Building Blocks of Transformation

## Strategy

Alignment on value, sequencing and roadmap

Vision

Domain  
reimagination

Roadmap and  
prioritization

Partnerships

Commercialization

## Domains & use cases

Re-imaging business  
domains through  
implementing use cases



AI for  
Design and  
Preconstruction

AI for  
Building

AI for  
Project Team  
Experience

AI for  
Employee  
Experience

AI for  
Client  
Experience

## AI STUDIO

### Operating Model

Enablers required to deliver  
use cases

Organization

Legal and  
Governance

AI Ops

Technology

Data

### Change Management

Driving scale and tracking  
value across Suffolk

Capability building

Process Redesign

Communications

# AI Studio – Centralized Delivery

Unified use-case intake and “face” to the business

Unified operating model with faster speed to delivery

Continuous experimentation to stay sighted on cutting edge developments

Physical space for immersive AI

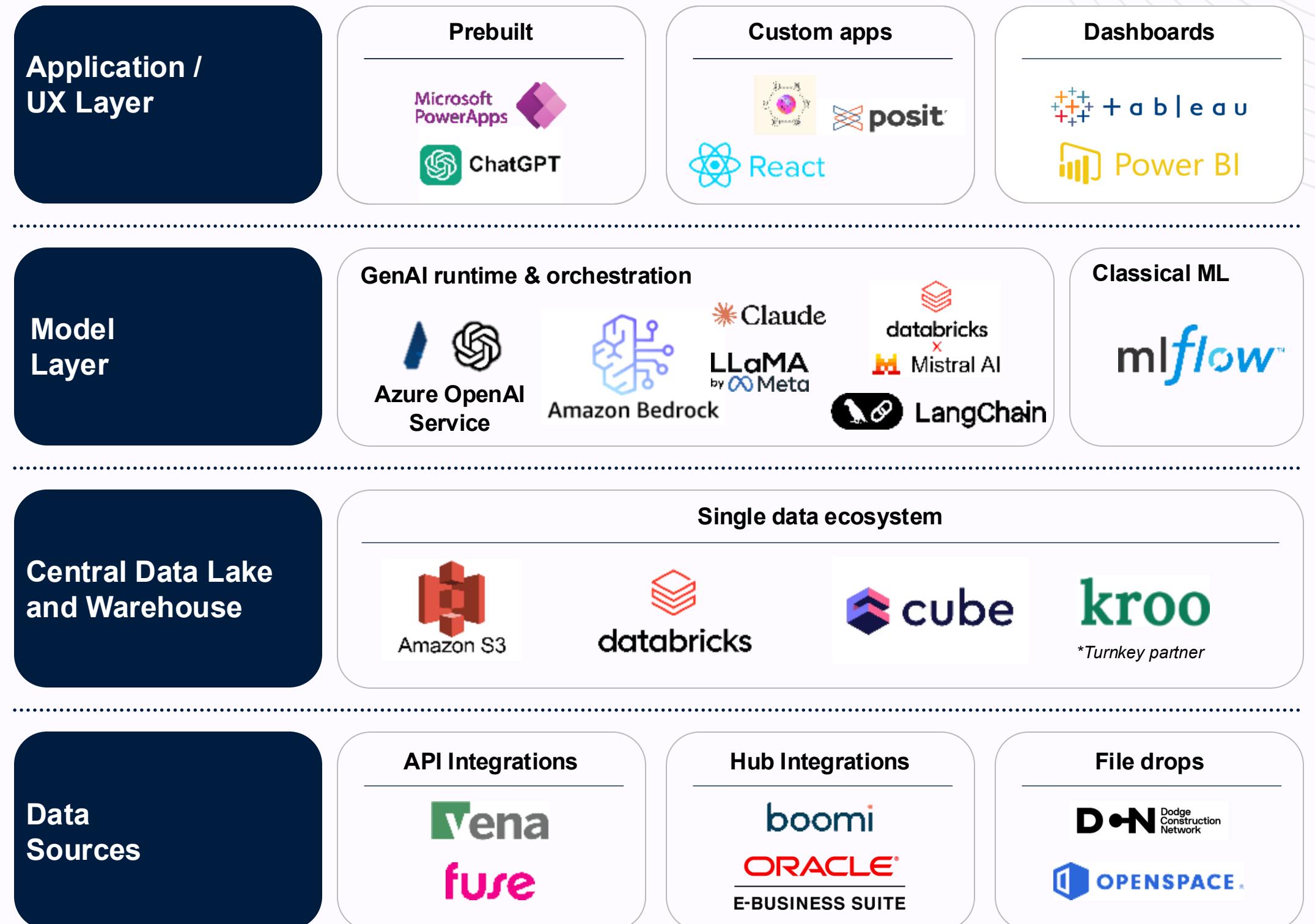
Business and technical training and engagement

Commercial grade expertise to support AI incubation

Cross-functional Fusion Teams with capabilities that enable AI at scale



# Data and Technology Stack



## KEY PRINCIPLES BEHIND THE TECH STACK

- ✓ Delivery model (buy/build/blend)
- ✓ Single data spine
- ✓ Shared governance and standards
- ✓ Options in model selection and UX
- ✓ Low-/no-code enablement

# Capability Building

Preparing the organization for AI



## Know AI

Build **awareness of strategy** through broad communications, two-way forums (e.g., town halls), and impact stories

*Educate on basic governance e.g., policies, do's and don'ts*



## Use AI

Encourage usage of **curated toolset** through defined onboarding pathways, by role if necessary

*“Hands on keyboard” training through office hours, reverse mentorship, etc.*



## Build AI

Develop AI-proficient employees **embedded in the business** to automate and streamline processes

*(optional) Create a central expert team or partner to deliver production-grade applications*



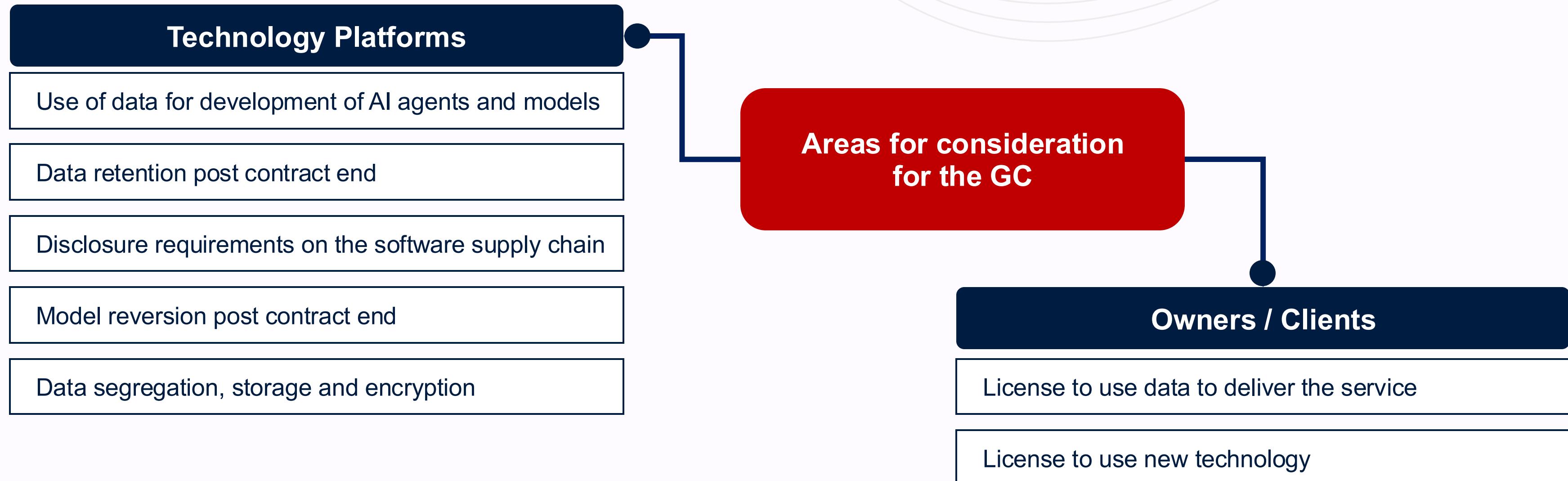
## Lead AI

Immerse leaders and managers in the “art of the possible with AI”, to **encourage experimentation** and **use case generation**

*Train managers on how to address concerns about AI*

# Legal considerations

Maturing risk posture in the age of AI



# Do's and Don'ts

## Do's

- ✓ Do centralize accountability and empower for faster decision-making
- ✓ Do develop a thoughtful risk framework for your approach to AI, and communicate this internally, as well as to your clients and partners
- ✓ Do invest equally in change management, training, and communications, as technology and data
- ✓ Do educate yourself frequently on the latest advancements – the field is changing fast
- ✓ Do keep a focus on value capture

## Don'ts

- ✗ Don't simply delegate AI leadership to the IT / Data / Innovation department. AI will fundamentally change businesses, and it needs to be led from the top
- ✗ Don't allow general concerns prevent you from meaningfully engaging and charting a path – there are now accepted solutions to most concerns, e.g., cybersecurity, data ownership and usage, model accuracy, etc.
- ✗ Don't accept “it doesn't work” as an excuse – there's a learning curve for this technology
- ✗ Don't accept “diffuse value” from AI – it should drive a meaningful change in efficiencies and performance

# Stay Connected

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