



# ARTIFICIAL INTELLIGENCE FOOD PROCESSING CCOA

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# ARTIFICIAL INTELLIGENCE THE AI LANDSCAPE

# Artificial Intelligence will reshape business

## Prominent technology & thought leader's - perspective

*“Artificial intelligence, deep learning, machine learning — whatever you’re doing if you don’t understand it — learn it. Because otherwise, you’re going to be a dinosaur within three years.”*

Mark Cuban

*“Artificial intelligence and generative AI may be the most important technology of any lifetime.”*

Marc Benioff, CEO of Salesforce

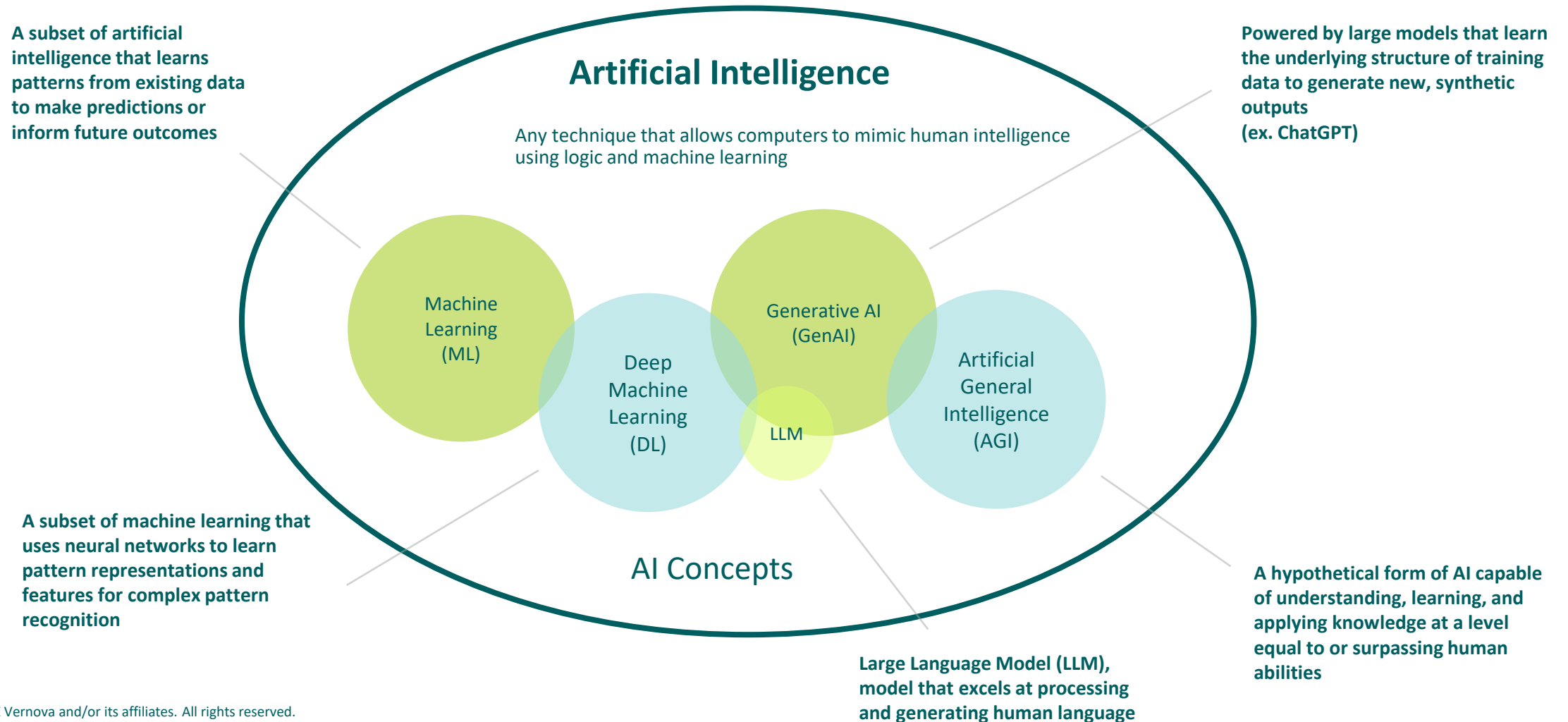
*“The playing field is poised to become a lot more competitive, and businesses that don’t deploy AI and data to help them innovate in everything they do will be at a disadvantage.”*

Paul Daugherty, Accenture

*“AI leadership requires a comprehensive roadmap grounded in strategy, process, data, and people.”*

Shobhit Varshney, VP at IBM Consulting

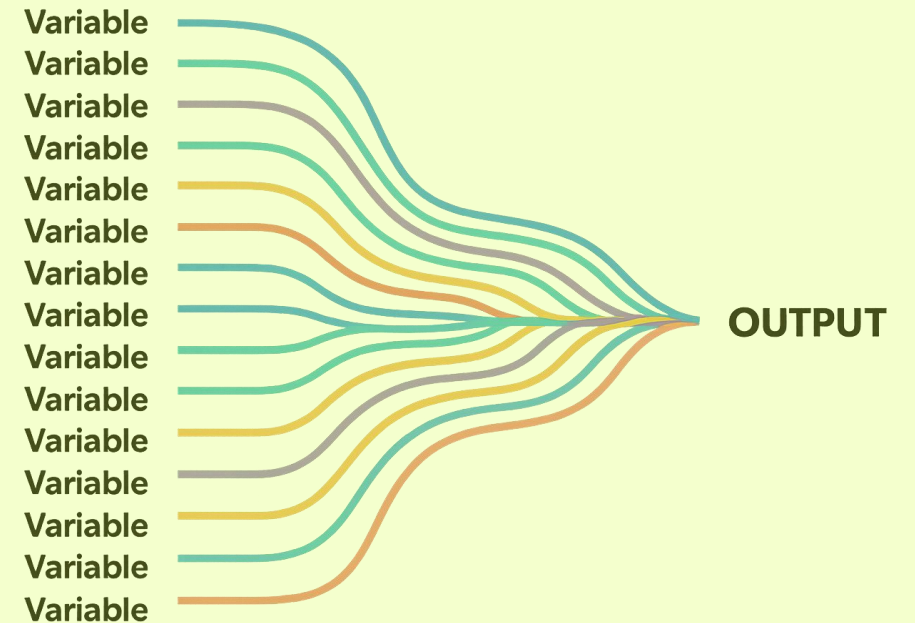
# AI VARIANTS



# Machine Learning

- **Ingest Data/Data Intensive** – Machine Learning systems are trained using historical data—this could be customer behavior, production metrics, or financial trends.
- **Learn Patterns** – The model identifies patterns and relationships within the data that are too complex or subtle for humans to spot reliably.
- **Generate Predictions** – Once trained, it can predict outcomes, classify information, or optimize decisions—improving efficiency, accuracy, and scalability. Giving you “The What If” scenarios

Can be trained on almost any data, and can be local to your facility



# Generative AI using LLMs

- Allows us to interface using natural language
- Can be trained on specific data
- Can be built into software solutions
- Greatly reduces to need for learning programming languages (Python, SQL, etc.)

Not **THE** solution but can be part of a larger AI-driven solution

## Cream and Crystal Blue

Beneath Tahoe's sky so bold and blue,  
Creamery hearts return, tried and true.  
From dairy farms both far and near,  
They gather with purpose, year to year.

They speak of milk, of churn and trade,  
Of cheeses cut and butters made.  
With pride they share, with care they grow,  
Their legacy in every flow.

Beneath the pines, beside the blue,  
The cream of California comes shining through.

*Churned with a little help from ChatGPT-4o*

# MAKING ARTIFICIAL INTELLIGENCE REAL

# It's not just "turning on" AI...

## DEFINE THE OUTCOME



Start with a clear, high-impact use case.

- Reducing downtime
- Improving yield
- Enhancing supply chain visibility
- Improving Quality

## COLLECT THE RIGHT DATA



Ensure high-quality, relevant data is available and accessible.

The foundation of effective AI is data that is:

- Clean
- Labeled
- Contextualized

## INTEGRATE THE AI MODEL



Select or develop a model tailored to your use case.

Integrate it into existing systems or workflows to deliver real-time insights.

Use OT friendly tools in manufacturing

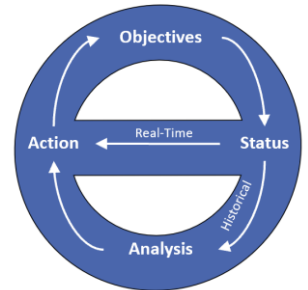
- Finance
- Continuous Improvement
- Process Engineer

## Operationalize and Scale



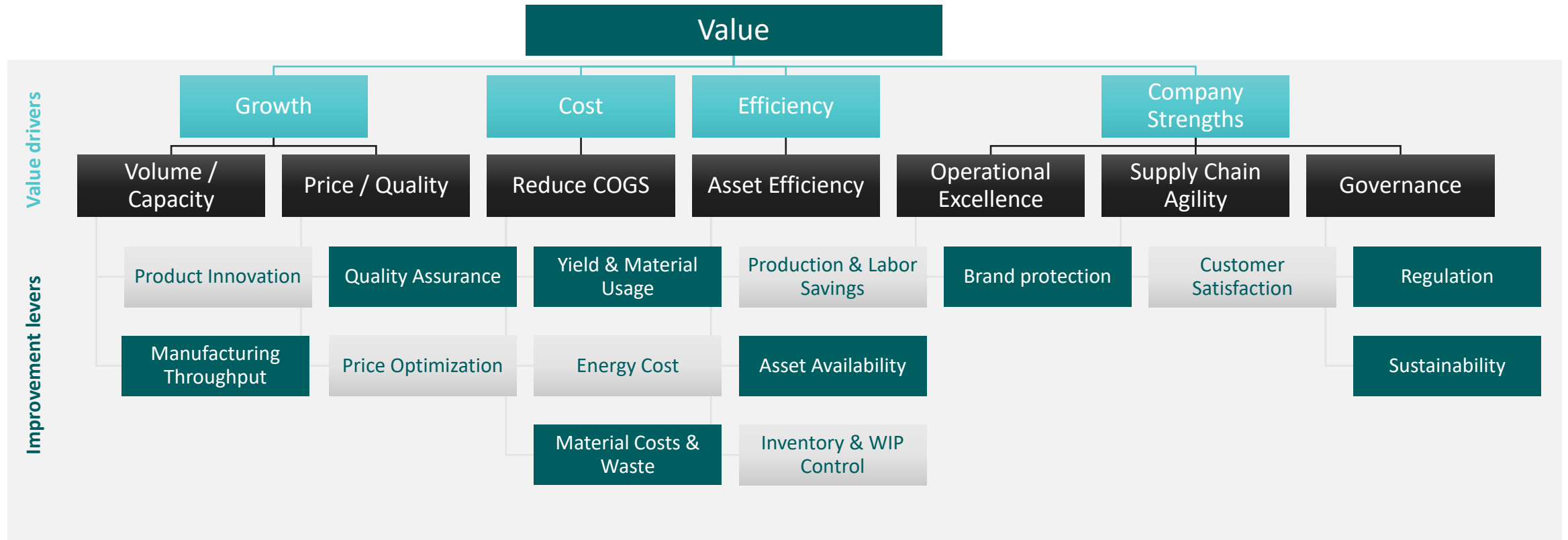
- Deploy into production
- Monitor performance
- Retrain as needed

Expand to new areas—turning one success into an enterprise capability.



Build into your culture

# Prioritize Outcomes – and ask the right question



Use Cases



# ARTIFICIAL INTELLIGENCE USE CASES

# Use Cases

1

**RUN-TO-TARGET  
(CENTERLINING)**

2

**PREDICTIVE  
DOWNTIME**

3

**PROCESS  
OPTIMIZATION**

4

**NATURAL LANGUAGE ANALYSIS**



**What is the value of 10% improvement?**

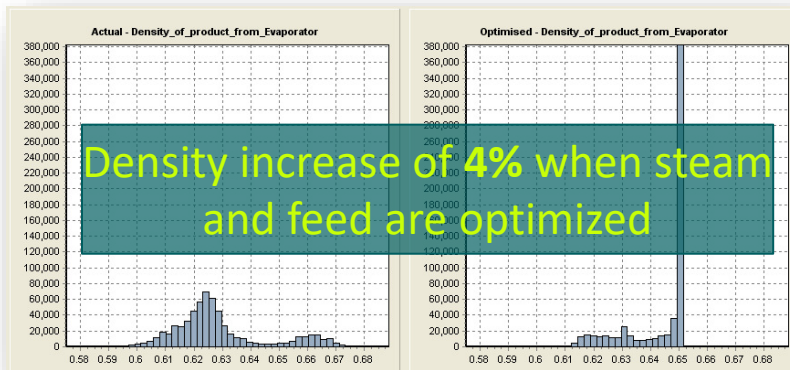
# RUN-TO-TARGET (CENTERLINING)

A **run-to-target** approach continuously learns golden targets and limits (min, max) that, if adhered to, ensures quality production

## Example: Spray Dryer & Evaporator

**Goal:** Stabilize temperature in evaporator and increase density of product from evaporator

- ✓ Monitor Control Loops
- ✓ Root cause of deviations
- ✓ Benefit Estimation (What-If)



## 2

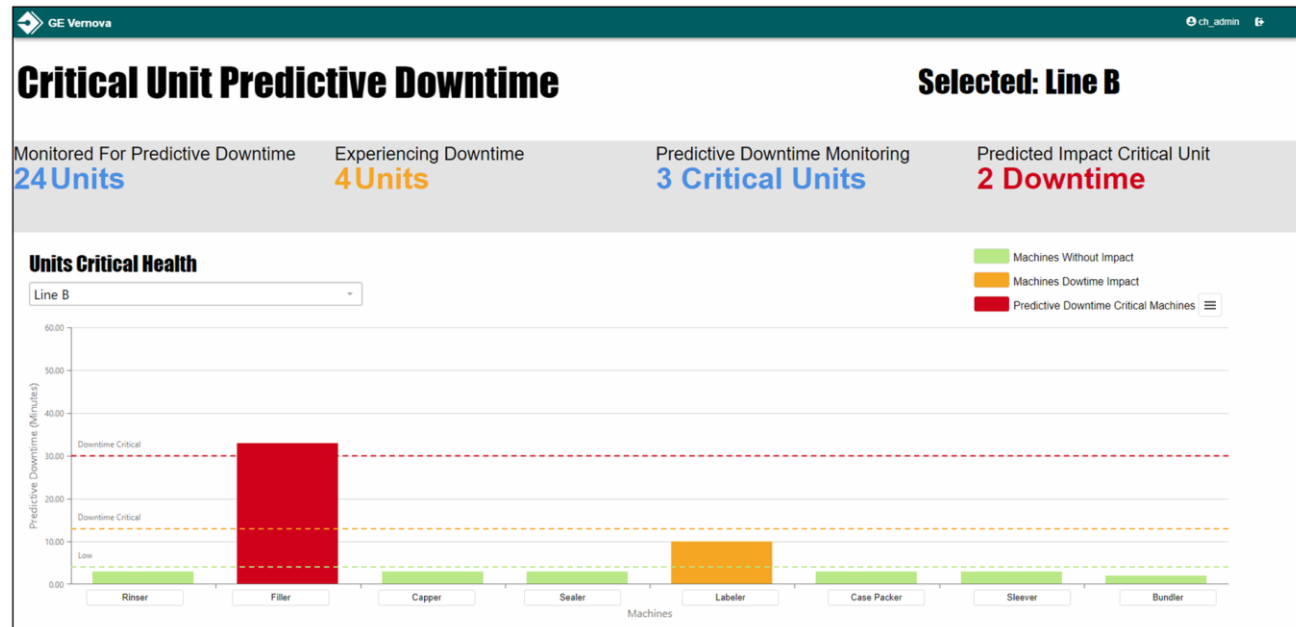
# PREDICTIVE DOWNTIME

## Example: Packaging Line

**Goal:** Reduce machine downtime by predicting failures in advance

- ✓ Train model on historical root cause analysis with faults given by automation and operators
- ✓ Include sensor data in the model (pressure, flow, temperature, speeds, etc.) to predict mechanical failures
- ✓ Alert operators and operations to service specific equipment **before it drifts out of calibration or fails**

A **predictive downtime approach** uses ML to learn patterns from past downtime events, and provide early warning of future downtime events so they can be prevented



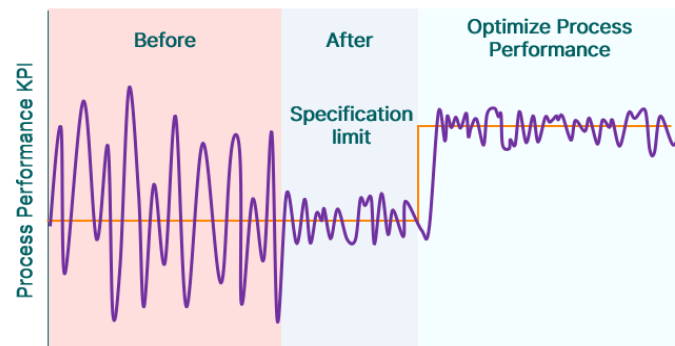
# PROCESS OPTIMIZATION

**Process Optimization** uses ML and historical data to help simulate, predict, and recommend adjustments for future process runs.



## Example: Filler Line

- ✓ Uses machine learning to predict outcomes of a process
- ✓ Allows “what-if” scenarios to test adjustments
- ✓ Improve throughput, yield, quality & efficiency
- ✓ More efficient energy consumption
- ✓ Less waste and re-work



**Reduced Product Waste 75%**

*Large food company*

# 4

## NATURAL LANGUAGE PROCESSING

Natural Language Processing (NLP) is a form of GenAI and uses large language models (LLM) to allow natural language queries into your process



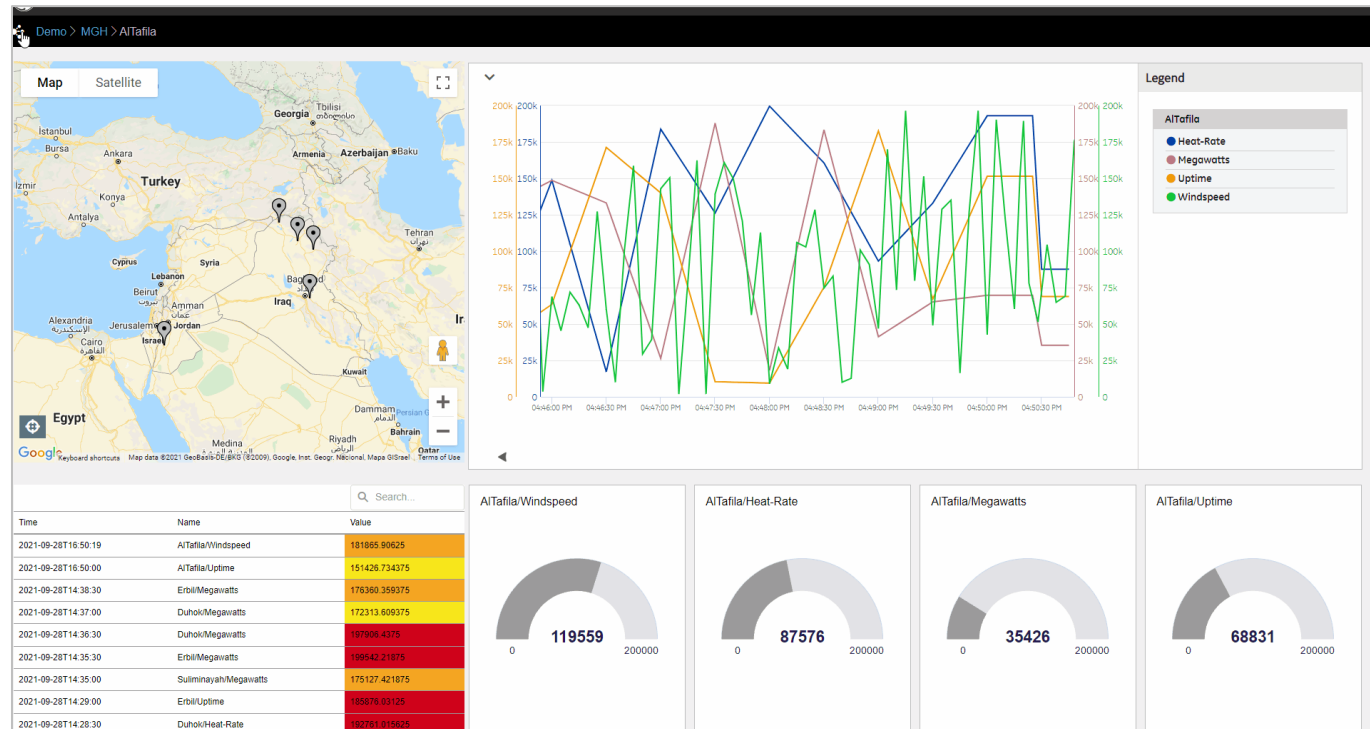
### Example: “Build me a Dashboard”

“Build me a dashboard to show performance differences between my two filler lines, and help me understand why one is better than the other”

- ✓ Uses your data
- ✓ Uses your natural language to query data
- ✓ Builds dashboards and reports using GenAI
- ✓ Drastic reduction in analysis time
- ✓ Eliminates needs for specialized data team

40%-time savings using generative dashboards

Keitoto Studio 2023



# Final Thoughts

- **Outcome:** start with an outcome in mind and be specific
- **Data:** you have data and just need to make sure you capture it and put it in context
- Existing talent: you have people today that can utilize AI and it's only getting less sophisticated to use
- **Use cases:** be creative and implement for your own use case

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Paul Daugherty, Accenture





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Presenting



LOOK FOR THE SEAL.  
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Platinum



Hospitality



Gold



Silver



Bronze

