Utilizing Analytics, AI and Automation to Optimize EHS&S performance
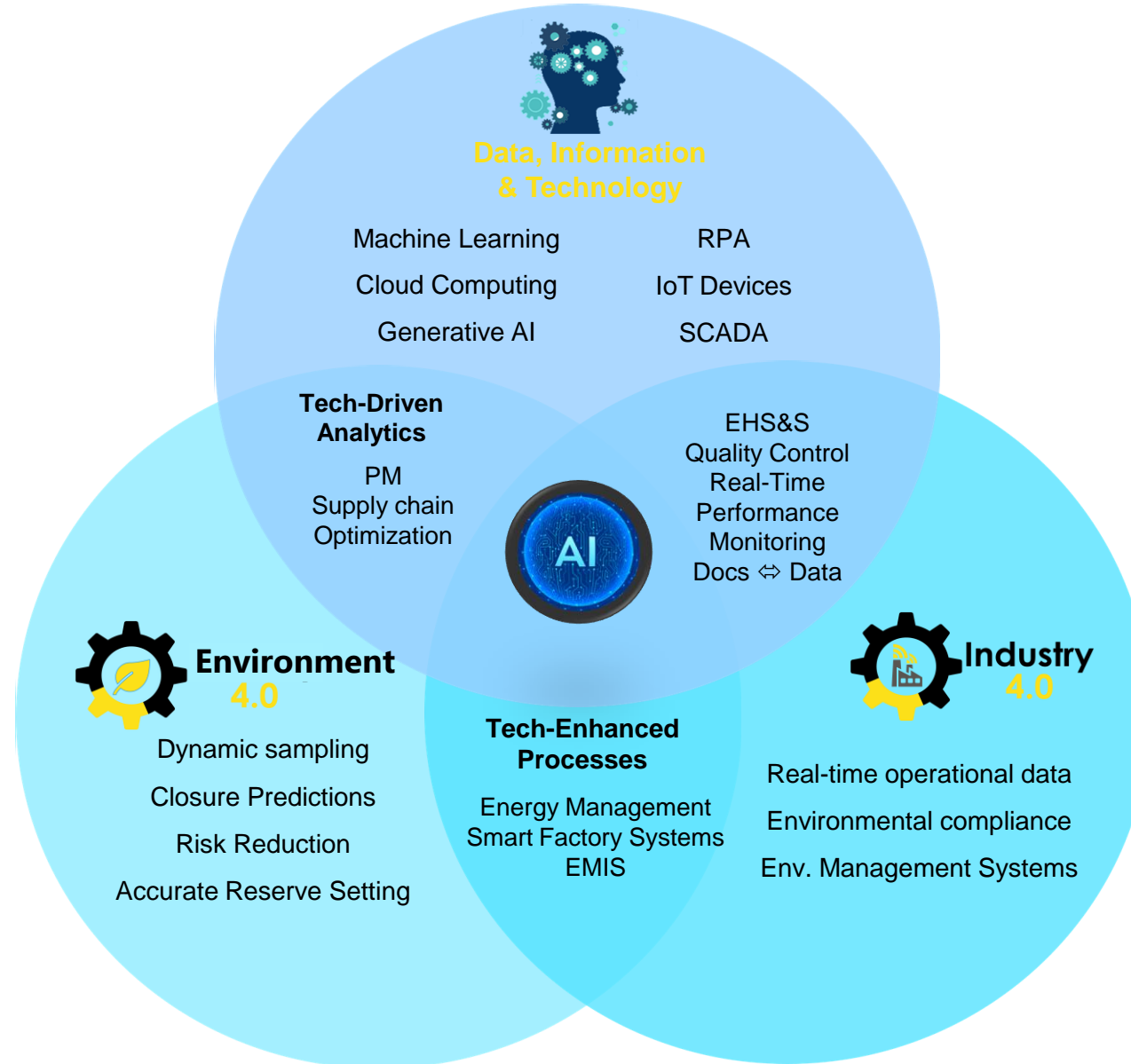
GHD

Agenda

- The Nexus of Industry, Environment, and AI

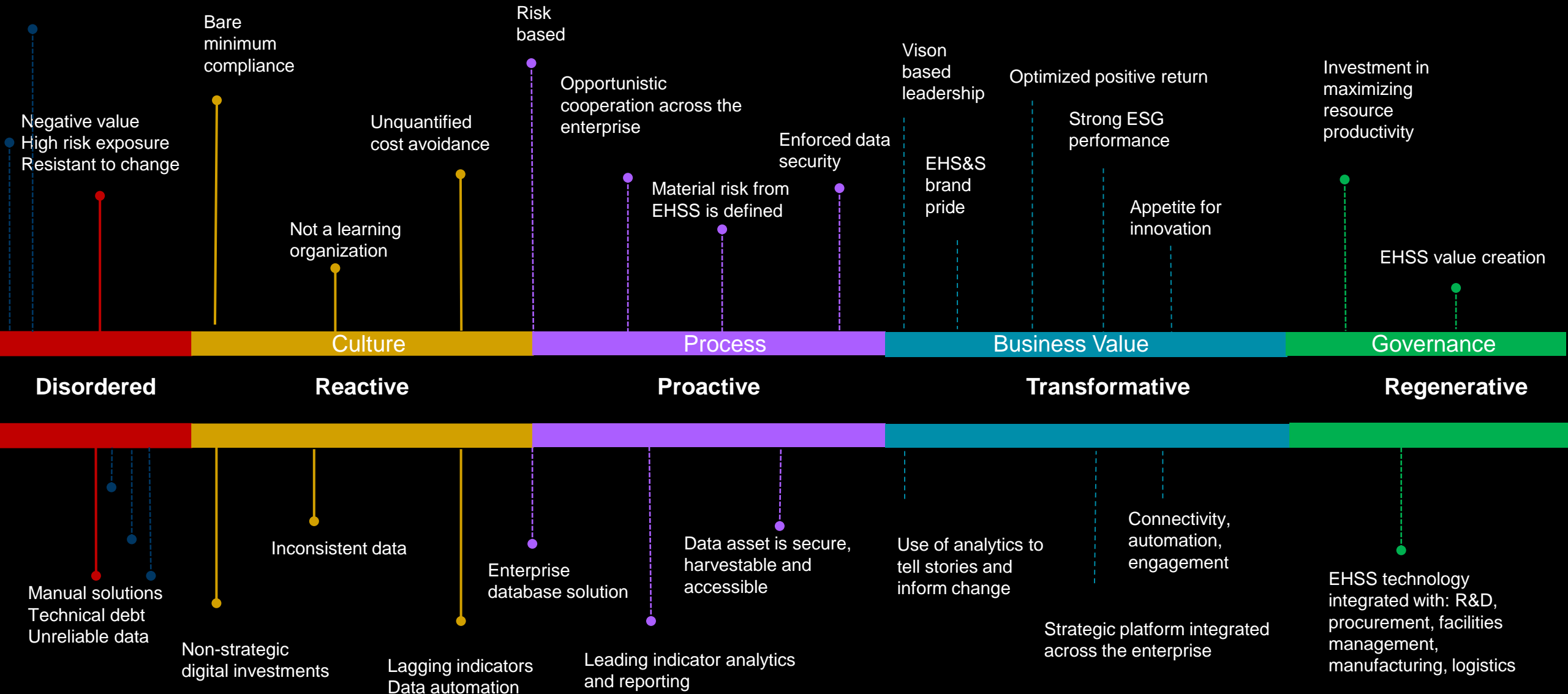- EHS&S Maturity Map: Where are You?

- Use Cases by Maturity

- Summary of Value

EHS&S AI

What happens at the nexus of Environment, Industry and AI?

Data, Information & Technology

Machine Learning   RPA

Cloud Computing   IoT Devices

Generative AI   SCADA

Tech-Driven Analytics

PM
Supply chain
Optimization

EHS&S
Quality Control
Real-Time
Performance
Monitoring
Docs ⇔ Data

AI

Environment 4.0

Dynamic sampling

Closure Predictions

Risk Reduction

Accurate Reserve Setting

Tech-Enhanced Processes

Energy Management
Smart Factory Systems
EMIS

Industry 4.0

Real-time operational data

Environmental compliance

Env. Management Systems

EHS&S Digital Maturity Map: Where are You?

Negative value
High risk exposure
Resistant to change

Bare minimum compliance

Unquantified cost avoidance

Not a learning organization

Risk based

Opportunistic cooperation across the enterprise

Material risk from EHSS is defined

Enforced data security

Vison based leadership

EHS&S brand pride

Optimized positive return

Strong ESG performance

Appetite for innovation

Investment in maximizing resource productivity

EHSS value creation

| Culture | Process | Business Value | Governance |

Disordered   **Reactive**   **Proactive**   **Transformative**   **Regenerative**

Manual solutions
Technical debt
Unreliable data

Non-strategic digital investments

Inconsistent data

Lagging indicators
Data automation

Enterprise database solution

Leading indicator analytics and reporting

Data asset is secure, harvestable and accessible

Use of analytics to tell stories and inform change

Connectivity, automation, engagement

Strategic platform integrated across the enterprise

EHSS technology integrated with: R&D, procurement, facilities management, manufacturing, logistics

Potential Use Cases

Doc Mining

Converting documents to data
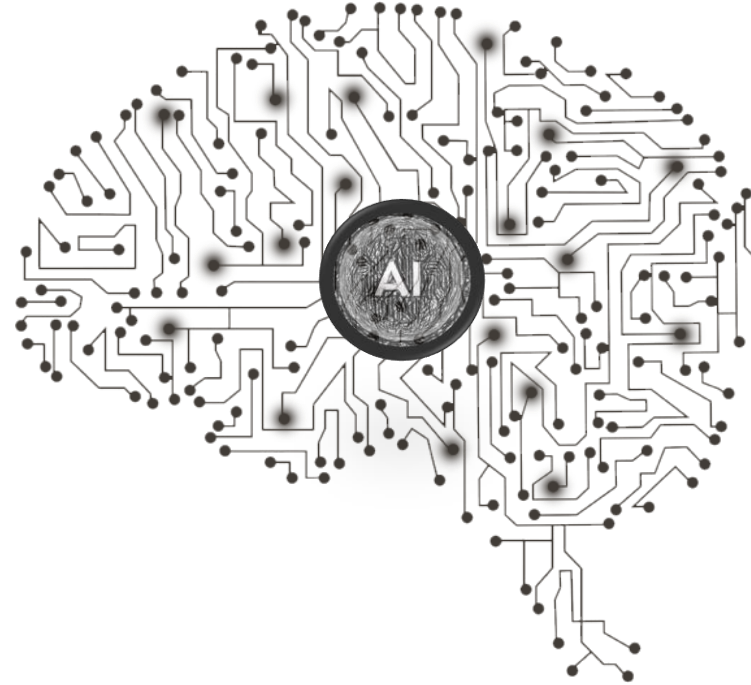
Dashboarding

Consolidating EHS Data Source with comprehensive visualization layers

Automation

Robotic Process Automation to streamline repetitive tasks

Reporting

From data to deliverables in one click

Potential Use Cases

Safety

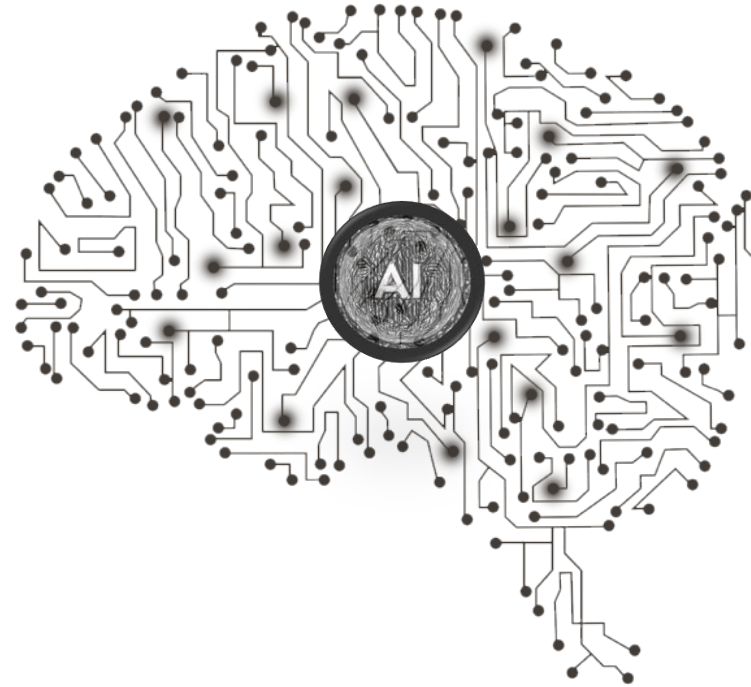To ensure compliance with safety standards and operational efficiency

Decision Support

Make complex environmental data easier to understand and take action on

Optimization

Hunting for cost savings in routine sampling

Product Safety

Integrating operator training, SOP and camera vision to enhance product safety

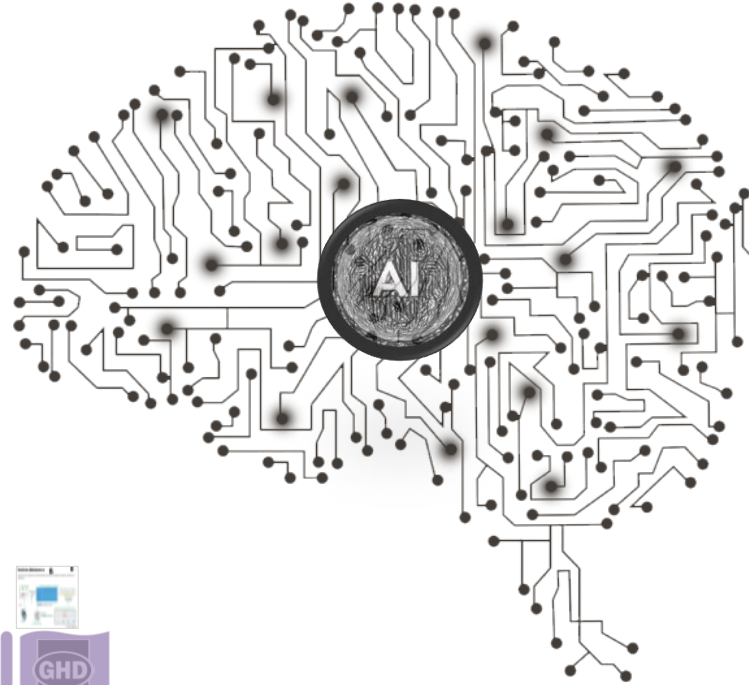# Potential Use Cases

| Disordered | Reactive | Proactive | Transformative | Regenerative |

Maintenance

Predict and prevent equipment failures, reducing downtime and enhancing safety

Process Safety

Detect deviations from safe operating procedures

Enrichment

Enrich our understanding of liabilities by benchmarking with public data

Predict Closure

Machine Learning to predict environmental liability closure timelines
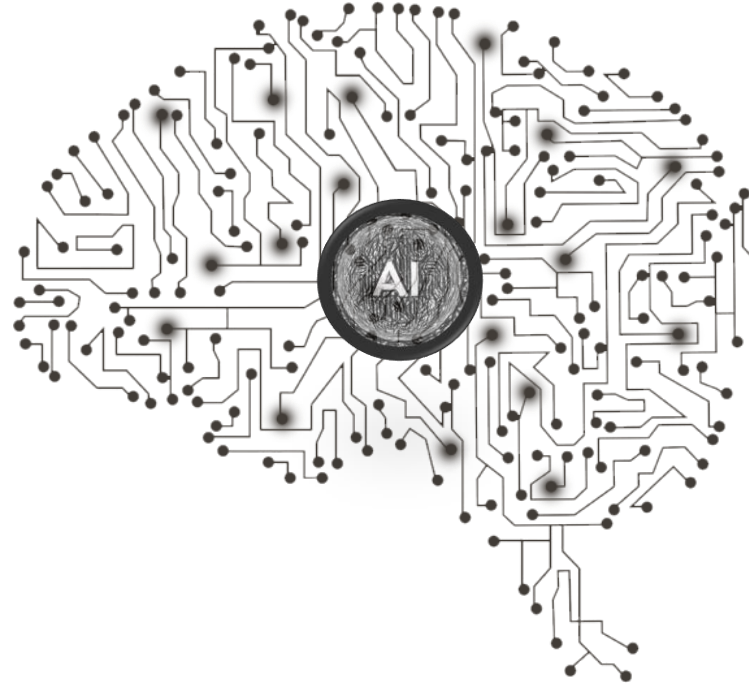
Potential Use Cases

Gen AI Bots

AI bots assist in equipment troubleshooting, performance analysis and maintenance procedure assistance and incident management

Knowledge Mining

Close the expert gap by making regulations and other complexities easier to understand and use

Optimizing GenAI

Systematically evaluate and improve on GenAI

GHD AI for EHS&S

Embark on a journey where Data Science, Technology and Industry expertise converge to fuel your transformative endeavors **within your ecosystem**

✓ Enhanced Operational Efficiency and Productivity

AI + 1st Principles based predictive models, with real time performance monitoring & early diagnostics.

✓ Data Driven Decision Making

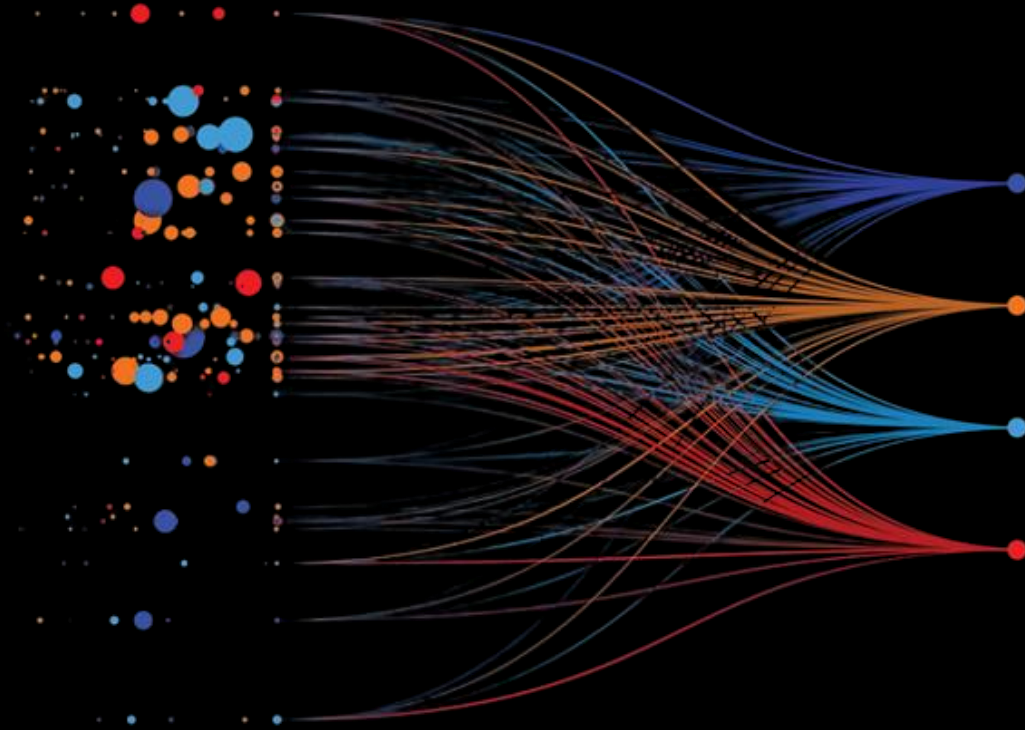Industrial AI synthesizes data from various IT/OT sources to provide actionable intelligence

✓ Sustainability and Environmental Compliance

AI enables smarter use of resources & energy management, advancing sustainability goals.

✓ Enhance Enterprise Transparency

Value creation across the enterprise through holistic understanding

2

Thank You

Advanced Analytics and AI Capabilities in Action

Unlocking transformative insights and efficiencies

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