



ABB Ability™ Genix Industrial Analytics and AI Suite

Makes operations and asset optimization easier than it looks

A value proposition for achieving digitalization goals

Imagine if you could...

Maximize **competitive advantage** and **output quality** – enhance productivity in a cost-effective manner

Create an ecosystem of highly efficient assets - predictable performance and **minimized downtimes**

Protect brand reputation through complete **safety** and commitment to environmental **sustainability**

Optimize supply chain integration – for **inventory efficiency** and **cost control**

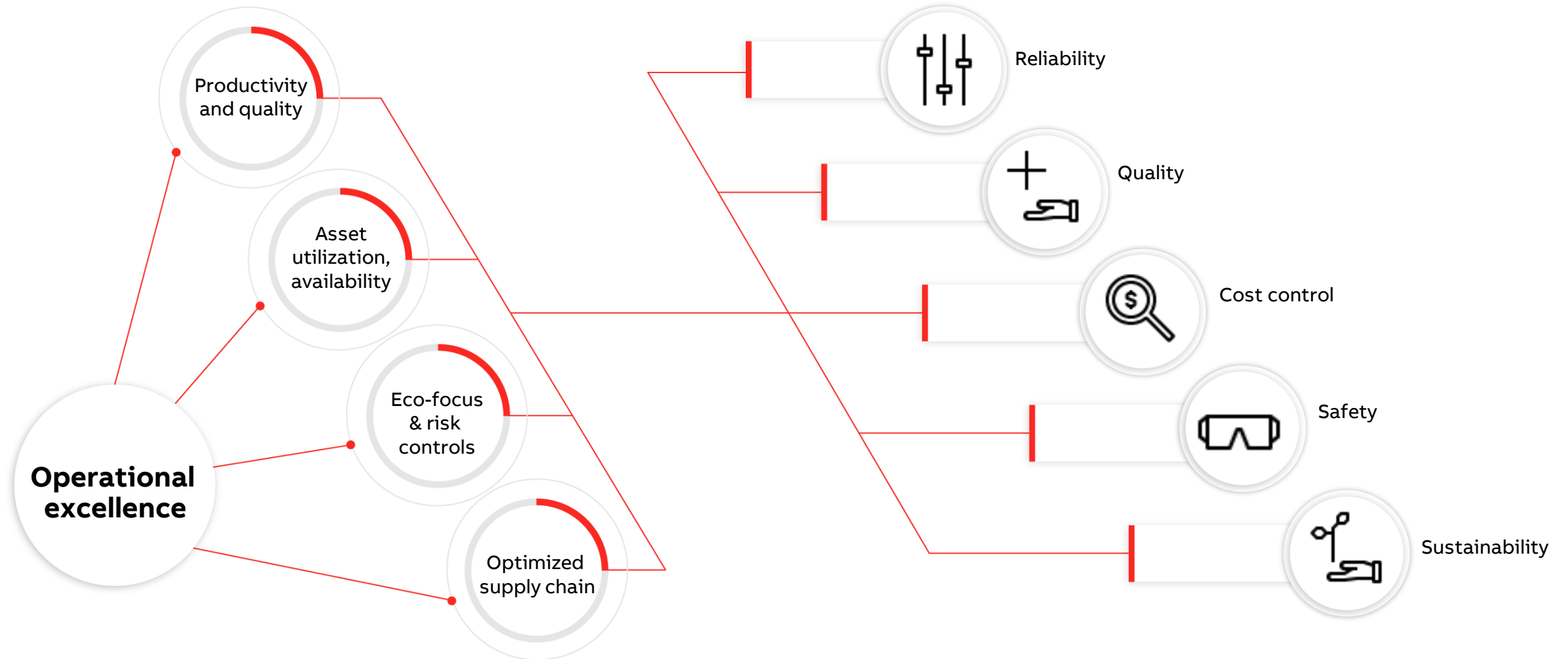
Increase ability to **respond quickly** to changes in customer needs and business conditions

Migrate rapidly to an **Industry 4.0** driven environment for complete enterprise performance visibility

Protect all current **IT investments** through a completely modular offering with open architecture

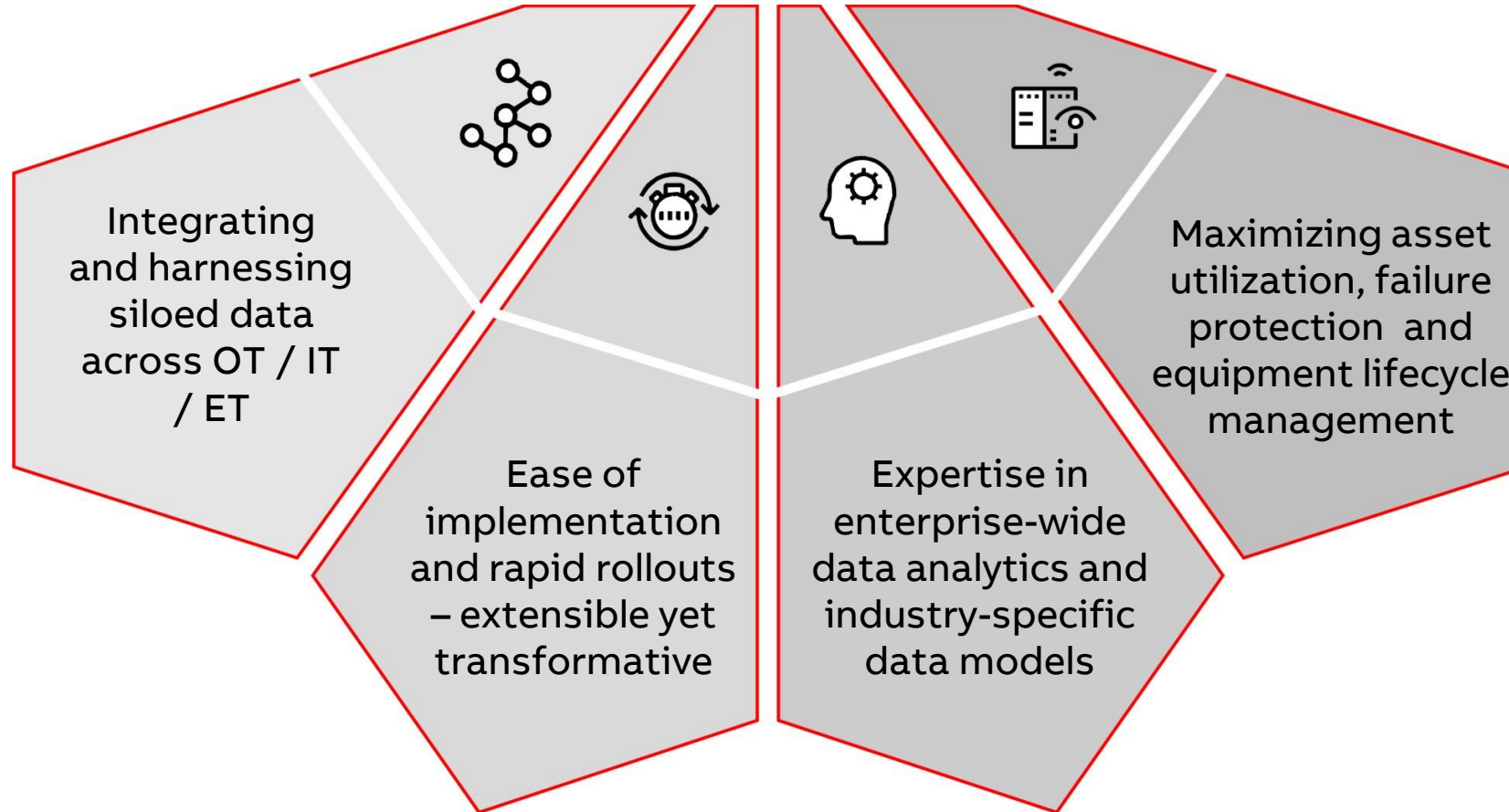
At the heart of the digital era industry

Staying productive in a fast-changing business environment



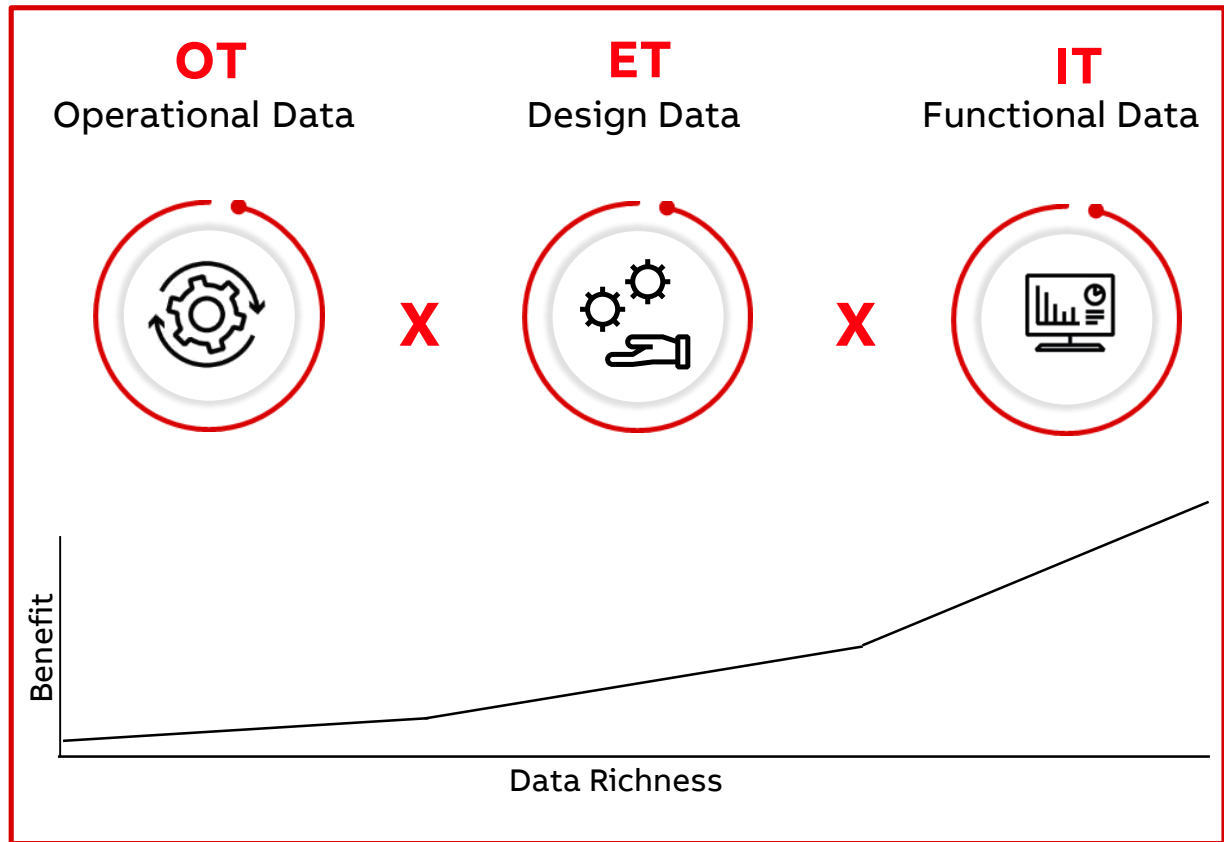
Adapting to the Industry 4.0 digitalization phenomenon

Digitalization challenges and key focus areas



The eXponential factor

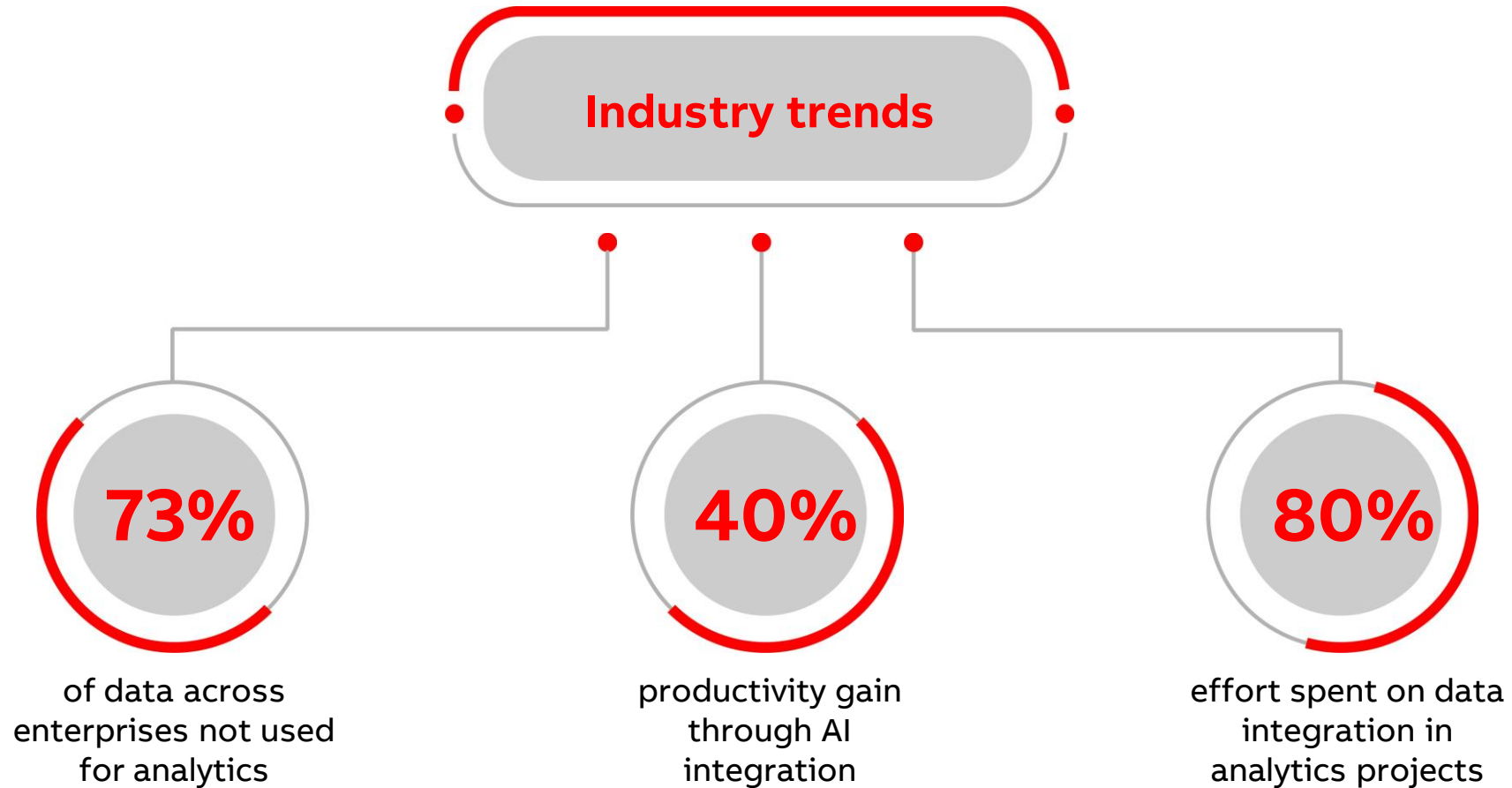
Value of DATA driving digital excellence to achieve business outcomes



This section displays four screenshots of ABB's digital industry analytics software. The top-left screenshot shows 'Asset Integrity Insights' with various charts and KPIs. The top-right screenshot shows a 3D model of industrial equipment with a list of components. The bottom-left screenshot shows 'Asset Life Assessment' with a world map and data tables. The bottom-right screenshot shows 'Opportunity Loss Manager (OLM)' with a donut chart and bar graphs. In the center, an icon of a head with a gear and a thumbs-up gesture is labeled 'Industrial AI', with red arrows pointing from the data sources to it.

Analytics and AI driven digital transformation challenges and opportunity

Harnessing the power of structured data approaches and analytics



Need for Platform Driven Solution Approach for Digital Enterprise

Accelerating the Digital Maturity Journey

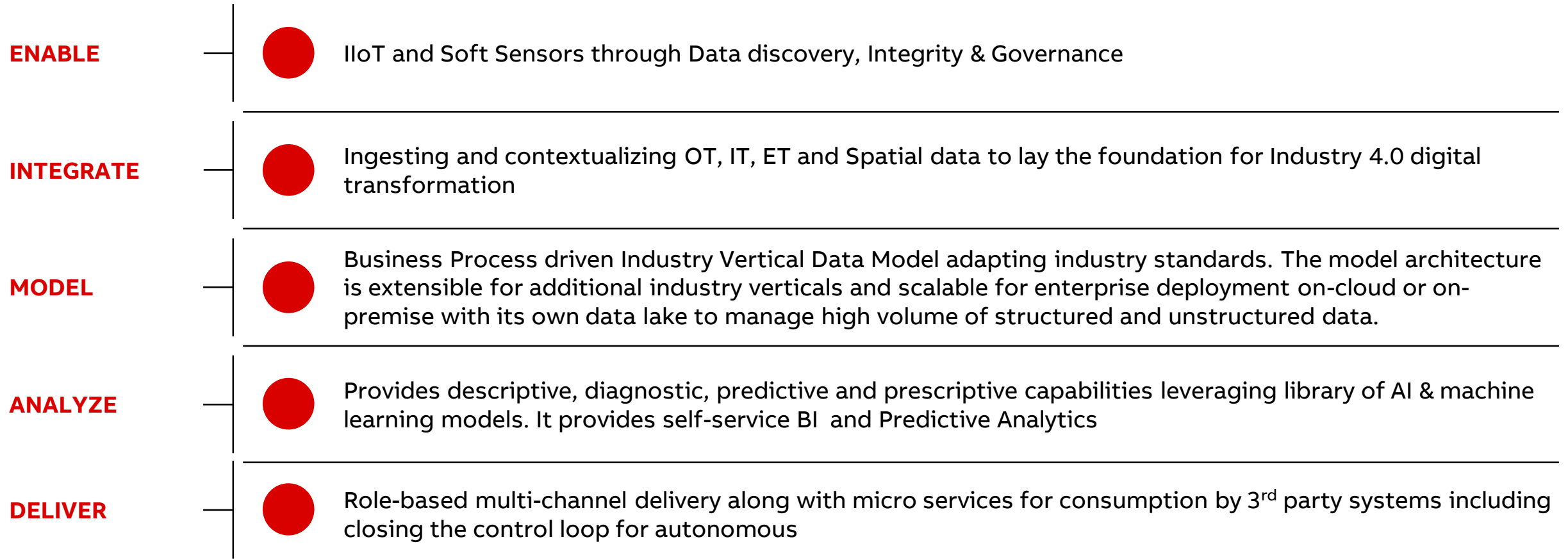


ABB Ability™ Genix Industrial Analytics and AI Suite

Transforming data into business value

A **scalable, smart** analytics and AI suite that helps you **best utilize** your data to boost productivity, reduce costs and improve performance

- Speeds up decisions
- Provides simple, actionable insights
- Get more value from your data
- Predict and optimize asset and plant performance

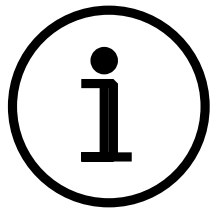


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Transforming data into business value

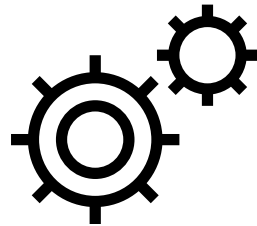
What is it?

- Enterprise grade, **comprehensive**, yet **modular** industry analytics and AI platform and applications suite
- Driving **business outcomes** seamlessly from asset to enterprises
- Deployment across **edge**, **on-premise** and **multi-cloud**



How does it work?

- Automates **contextual integration of OT-IT-Engineering data**
- A smart, **pre-built** and extensible Industry Cognitive Model provides deeper cross-functional insights
- **Applies AI technologies** to the industrial context to resolve analytics and optimization challenges



What does it deliver?

- Unlocks the value of data through IIoT and Industrial AI
- Actionable insights and analytical **applications, straight out of the box**
- Build and deploy analytical applications readily – reduce costs and improve margins
- **Self-service analytics** empowers business users



Business outcomes

- Lower maintenance cost, improve reliability and lower operational risk
- Extend equipment life, reduce capital expenditure
- Improve asset integrity and process safety
- Lower operational cost and improve sustainability
- Increase throughput, revenue and/or profitability

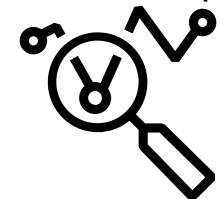


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Data, domain, technology and capabilities coming together for maximum impact

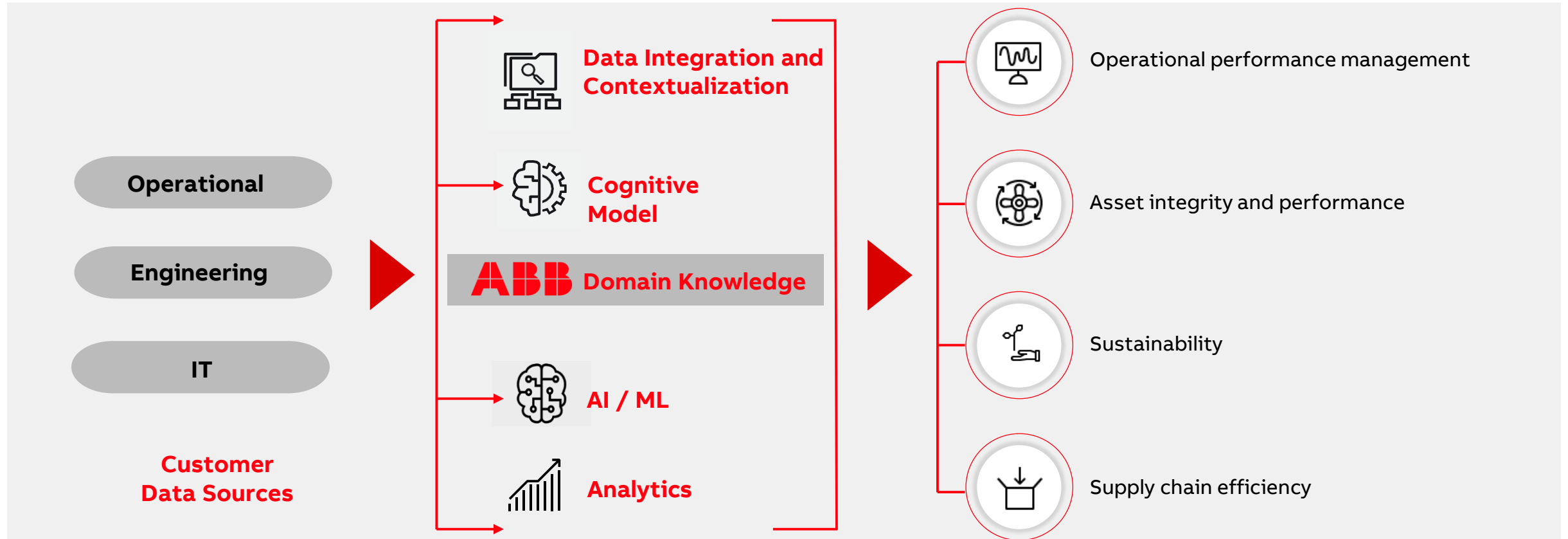
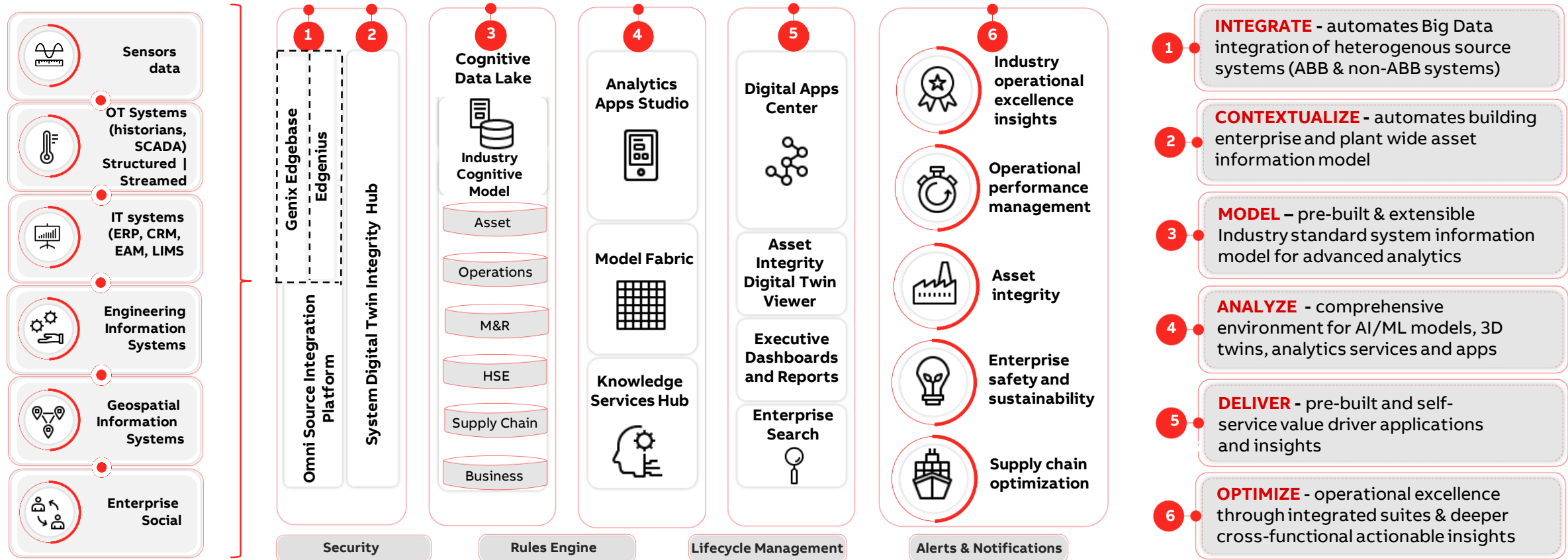


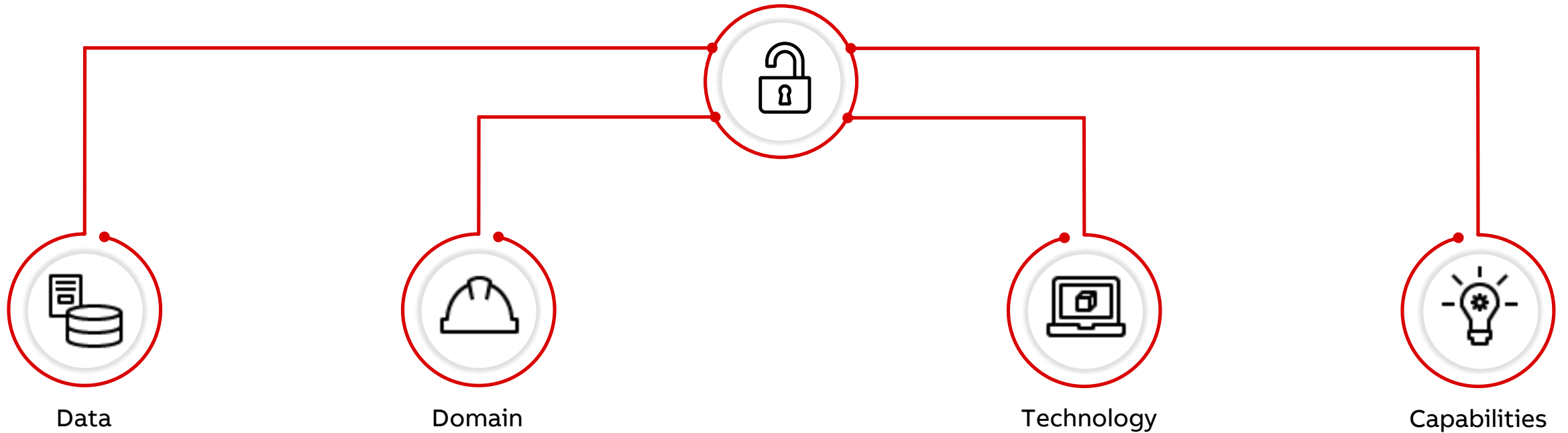
ABB Ability™ Genix Industrial Analytics and AI Suite

Enterprise grade modular, open standards based, deployment across edge, on-premise and multi-cloud



Unlocking value through ABB's inherent strengths and capabilities

Bringing together data, domain, technology and capabilities



Data

Domain

Technology

Capabilities

OT + IT + ET with spatial convergence

Brings together data from silos into one cognitive data lake and modular end-user options

Analytics pre-built with domain expertise

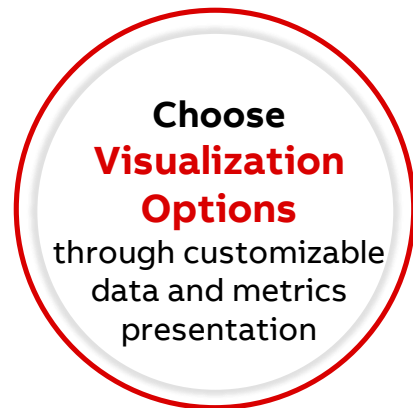
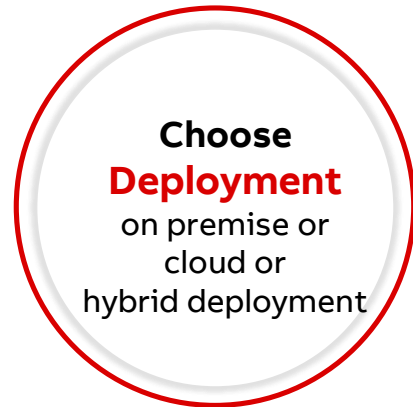
Highly visual – easy to understand and intuitive to action

Platform + service + apps

Industrial AI at each step to drive actionable insights with consultative approach to implementation

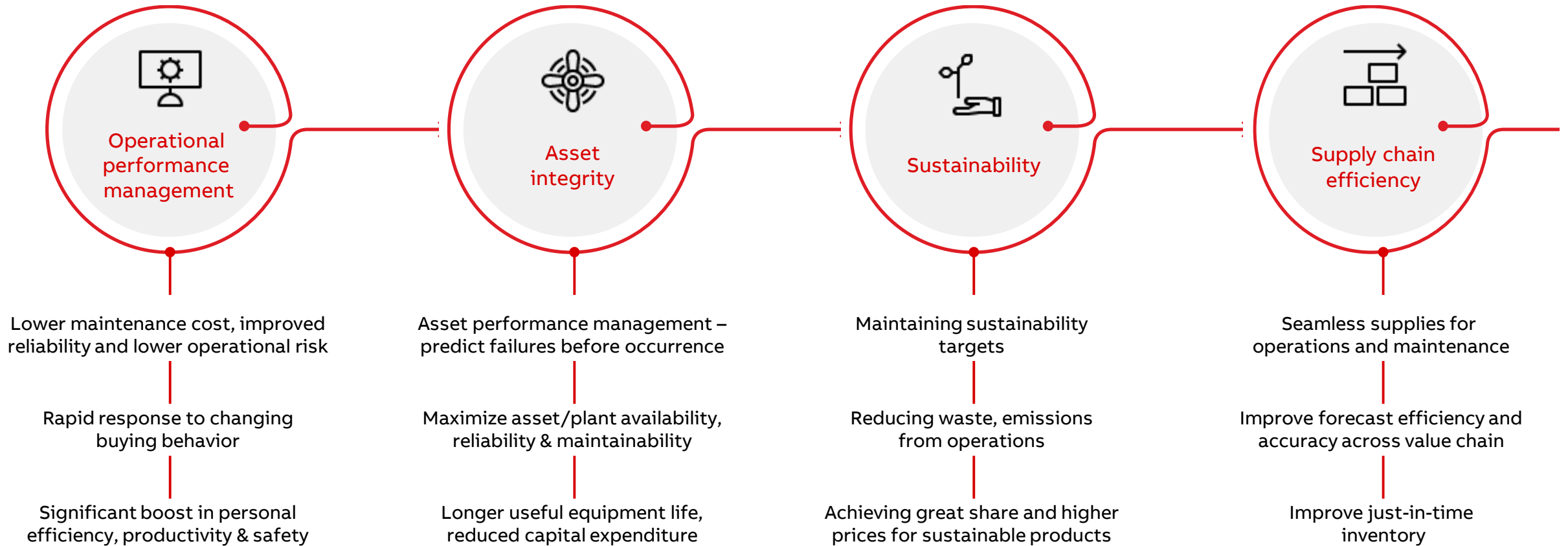
The power of choice

Built as an enterprise suite with complete modularity and flexibility



How customers benefit

Addresses operational performance management, asset integrity, sustainability, supply chain efficiency



Increase availability of assets / plants and avoid process upset condition

Avoid system failures by analyzing system operational patterns – System Anomaly Detection

Unscheduled trip reduced by up to 50%



Objective:

- Reduce unscheduled trip
- Increase plant availability
- Avoid process upset condition
- Increase operator response time



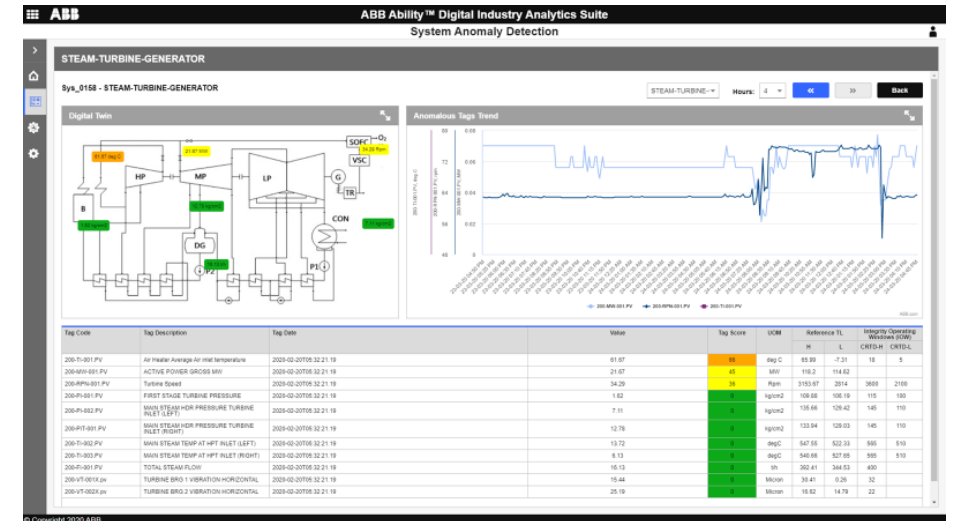
Challenges:

- Only 18% of assets have age related failure pattern
- 82% of asset failures occur randomly
- Most random failures of an asset are due to the impact of related assets (ARC data)



Solution:

- Extract data from IT (SAP), OT (OSI-PI) and ET (SPF) data sources with effective streaming of real time telemetry data and automate contextualization
- Add system schematics to provide visual integration of the digital twin
- Detect anomalies based on dynamic operating limits using industry AI model
- Run Performance Curve based analysis to detect deviations



Optimize performance of critical equipment

Monitor in real time and forecast / predict performance for predictive maintenance strategy

Up to 20% increase in availability | 25-30% reduction in O&M cost



Objective:

Increase production and reliability of plant by reducing unavailability of critical equipment like heat exchangers, pumps, blowers etc. and establish predictive maintenance strategy



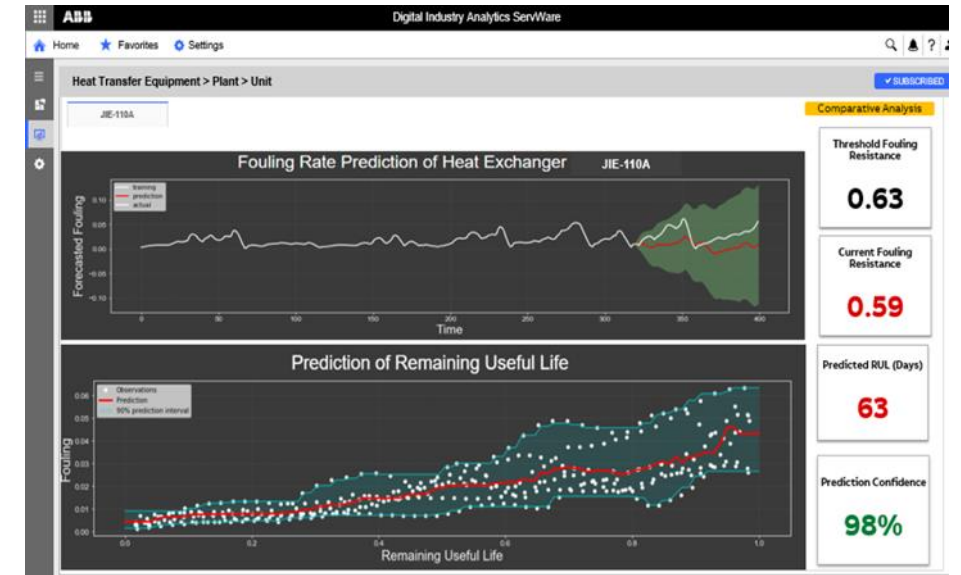
Challenges:

- Occurs due to varying feed compositions and impurities, operating in conditions other than design
- Reduction of asset performance and plant capacity utilization leading to production loss
- Non-availability of advanced analytics



Solution:

- Collect data from multiple source systems – Operation, Quality, Dosing, Asset Mgt
- Identify critical influential parameters through sensitivity analysis
- Predict remaining operating life of heat exchanger or pumps through advanced ML techniques
- Correlate with decision tree for diagnostic analysis
- Get prescriptions for increase in exchanger life with multivariate analysis



Production loss minimization – Opportunity Loss Manager

Identify and manage losses due to process inefficiencies, quality, yield and others

Reduction in hidden losses by 5-10%



Objective:

Organizations want solutions to analyze existing process inefficiencies and reduce losses by identifying and addressing various losses arising from production; yield; energy, utilities, catalyst consumption; corrosion and erosion; and people productivity



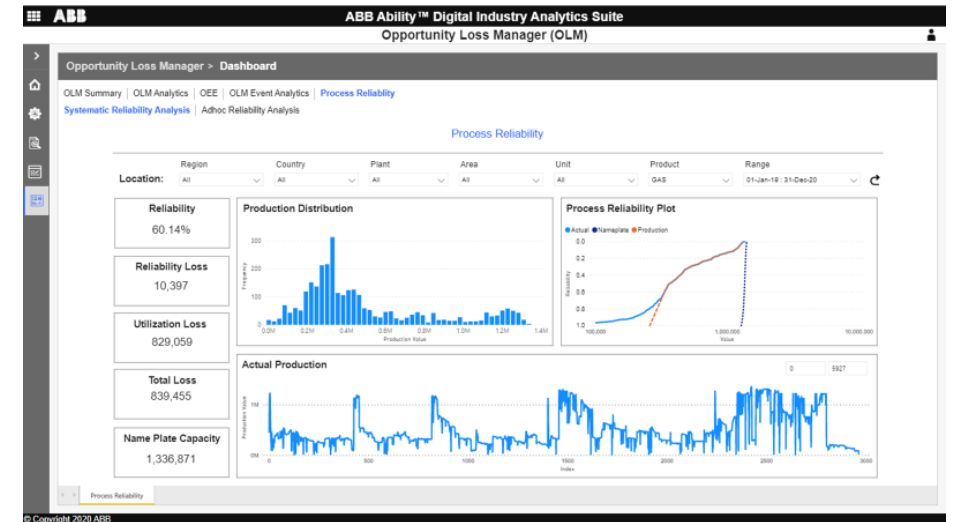
Challenges:

Manufacturing plants face multiple glitches due to complex and disconnected processes, resulting in off-spec products, unit slowdown and even shutdowns



Solution:

- Extract data from IT (SAP), OT (OSI-PI) data sources
- Contextualize data to generate process-based contextual model
- Analyze contextualized process-based data using Industrial AI modeling
- Deliver a production optimization solution to provide predictive insights, real-time visualization of process based contextual model, root cause analysis etc.



Asset integrity

Enable 360° view of all asset performance parameters on one integrated platform

Identify bad actors, reduce maintenance cost, extend asset life



Objective:

Increase production and reliability of plant by reducing unavailability of critical equipment like heat exchangers, pumps, blowers etc. and establish predictive maintenance strategy



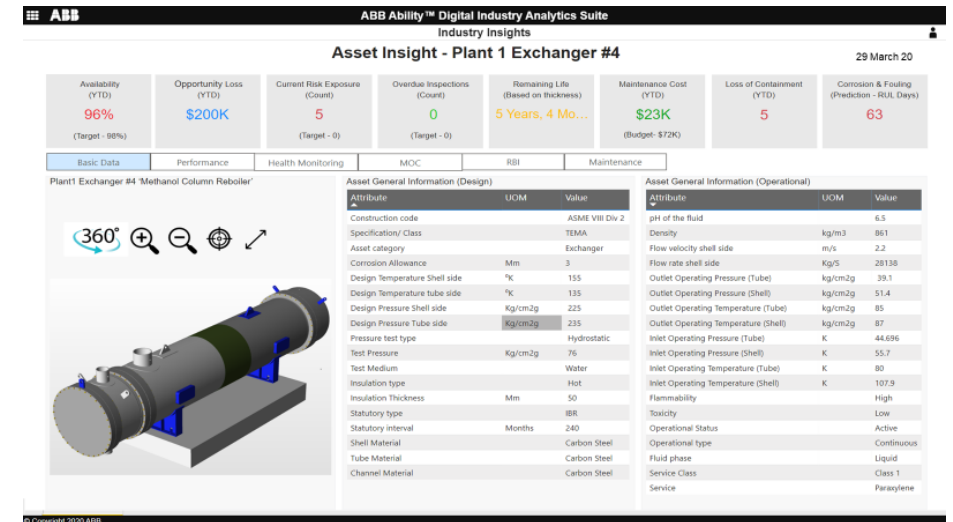
Challenges:

Data and intelligence on various asset parameters resting on diverse unconnected platforms – and no single source to understand asset integrity holistically



Solution:

- Collect data from multiple source systems
- Create Inspection Management Plan
- Create Annual Asset Integrity Plan
- View statutory compliance
- Track IOW & deviations



Self-service advanced analytics

Move to a digital business environment across the enterprise

Enable business users to create own analytics, reduce IT costs



Objective:

Support a range of analytics requirements including:

- Ad-hoc analysis & self-service BI across the organization
- Advanced analytics / what-if-analysis for strategic decisions, benchmarking and more



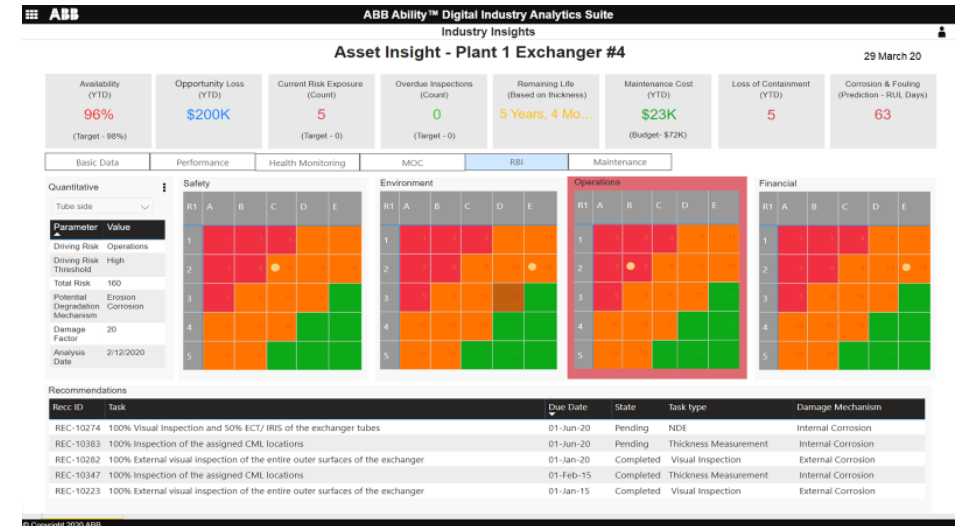
Objective:

- Plant operators rely on IT operators / third party services for performing integrated analytics, AI models and application visualization
- Lack of integrated cross functional information



Solution:

- Get and consolidate contextualized data from different systems
- Employ a cross-functional contextualized data model with industry taxonomy
- Resolve consistency checks across asset and sensor data and
- Enable creation of KPIs using consumable services and dashboards using predefined templates
- Employ advanced analytics for operational data exploration, model recommendation



The ABB Ability™ Genix Advantage

Ways to deliver operational improvement



Simplified

Effortless data integration, open-standard interoperability. Built-in expertise and value **straight out of the box**. User-friendly KPI visualization, self-service applications.



Scalable

Modular for customizability and flexible deployment. Application development functionality for extensibility and future applications.



Smart

Single source of intelligence with built-in advanced AI/ML, pre-built industry insights and applications



Speed

Self-service analytics for faster decision making. Faster development and deployment of analytics applications.



Secure

Adherence to cyber security standards to prevent unauthorized access while ensuring data integrity.



ABB