ABB ABILITY ™ GENIX INDUSTRIAL ANALYTICS AND AI SUITE

Power to make better, faster, smarter business decisions

With the advent of Industry 4.0, digitalization and digital transformation have emerged as core drivers for industry.

Digital transformation is driving key business outcomes to improve sustainability, environment, energy efficiency, health & safety, supply chain optimization and other strategic excellence drivers.

Industrial companies' challenges

Data is at the heart of powering industrial analytics and the primary enabler in a solution that can collate, amalgamate and interpret data for real-time actionable insights. Although IIoT is poised to grow and has gained increased acceptance over the years, the challenge lies in managing and analyzing the sheer volume of data residing in disparate networks such as operations, IT, engineering and other systems, whether on premise or in the cloud. As enterprises embark on implementing digital transformation, they face a wide range of challenges.

Enterprise visibility and efficient decision making
With the increasing use of Internet of Things (IoT), organizations are facing difficulties in aggregating and analyzing data. They lack the capability to extract and analyze data being captured by various systems, which rests in silos. Therefore, organizations face the dire need to improve their data mining capacities to improve real-time decisions.

Optimizing asset utilization
Asset utilization is important to an organization because its success is often tied to its ability to manage and leverage assets. Maximizing asset availability, utilization and returns through failure prediction, lifecycle management and equipment-specific data models is a distinct challenge.

Lack of internal resources / ageing workforce
It is not enough to just have resources; they should also possess the skill sets and expertise required to successfully analyze the big data available in various systems across the landscape. Another significant challenge is the ageing workforce, which results in loss of knowledge base within the company. The number of people that can transfer their experience to younger generations is decreasing, while systems are getting more complex and lifecycles becoming shorter.

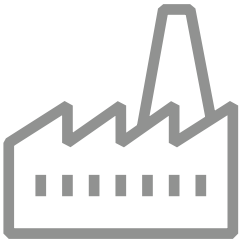
Optimizing operations
Organizations want to ensure optimized operational efficiency, throughput and quality with industry-specific data models and end-customer value

Ease to use while ensuring cybersecurity
Organizations are on the lookout for easy-to-use and rapidly deployable solutions with different options to suit business considerations and preferences, interoperability, visualization and scalability. With the growing need to analyze data across organization networks i.e. operations, business, engineering, HR, and to leverage cloud infrastructure, it is becoming critical to ensure that cybersecurity and data integrity are inherently built into the platform and solution.

Need for a comprehensive digital program

Structured implementation of a comprehensive digital program is a significant business need since organizations realize that ad-hoc development of digital solutions, especially those developed as proprietary applications, isn't necessarily delivering the desired results and is leading to higher total cost of ownership.
There is also a need for ease of data exchange across systems to make processes autonomous and establish cyber-physical systems to make Industry 4.0 possible; and the smart factory a reality.

The pressing needs to accelerate digital transformation are easier data capture and doing more with data. Industry trends point to a few trends, addressing which is key to harnessing the power of data to transform. Firstly, a very low rate of data integrated with the analytics process and an inordinate effort on integrating this data with analytics. Given the strong productivity gains that can be realized – up to 40% according to industry studies – through integration of AI, there is ample opportunity to gain the benefits of industrial AI and analytics to build competitive advantage.



Industry trends

73% of data across enterprises not used for analytics

40% productivity gain through AI integration

80% effort spent on data integration in analytics projects

ABB Ability™ Genix

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

ABB Ability™ Genix Industrial Analytics and AI Suite is a comprehensive yet modular big data analytics and industry AI suite for rapidly deployable industry value applications on an enterprise-grade industrial analytics platform.
It unlocks the power of contextualized data amalgamated from operational, IT and engineering systems through a combination of deep domain expertise and advanced analytics, to accelerate Industry 4.0. It can be deployed and scaled seamlessly and securely on edge, on-premise, and on cloud in a SaaS or PaaS model.
A wide range of features make ABB Ability™ Genix a powerful digital transformation offering for organizations across different industries.

1

Automates data integration from operational, IT, engineering and geospatial systems together with unstructured streaming data

2

Pre-built Industry standards based and extensible industry cognitive model to provide deeper cross-functional insights

3

Pre-packaged industry value applications mapped to industry value pillars and value drivers

4

Open standards based architecture for greater interoperability

5

Rich analytics with real-time and predictive capabilities driven by AI / ML and reinforced learning with self-tuning algorithms for greater accuracy

6

Unlocks the value of contextualized data through IoT, industrial AI, predictive and cross functional actionable insights

7

Rapid and modular deployment, faster ROI through pre-built data model, adapters, ML models, knowledge services

8

Addressing cybersecurity and deployment complexities for enterprise digital implementations

9

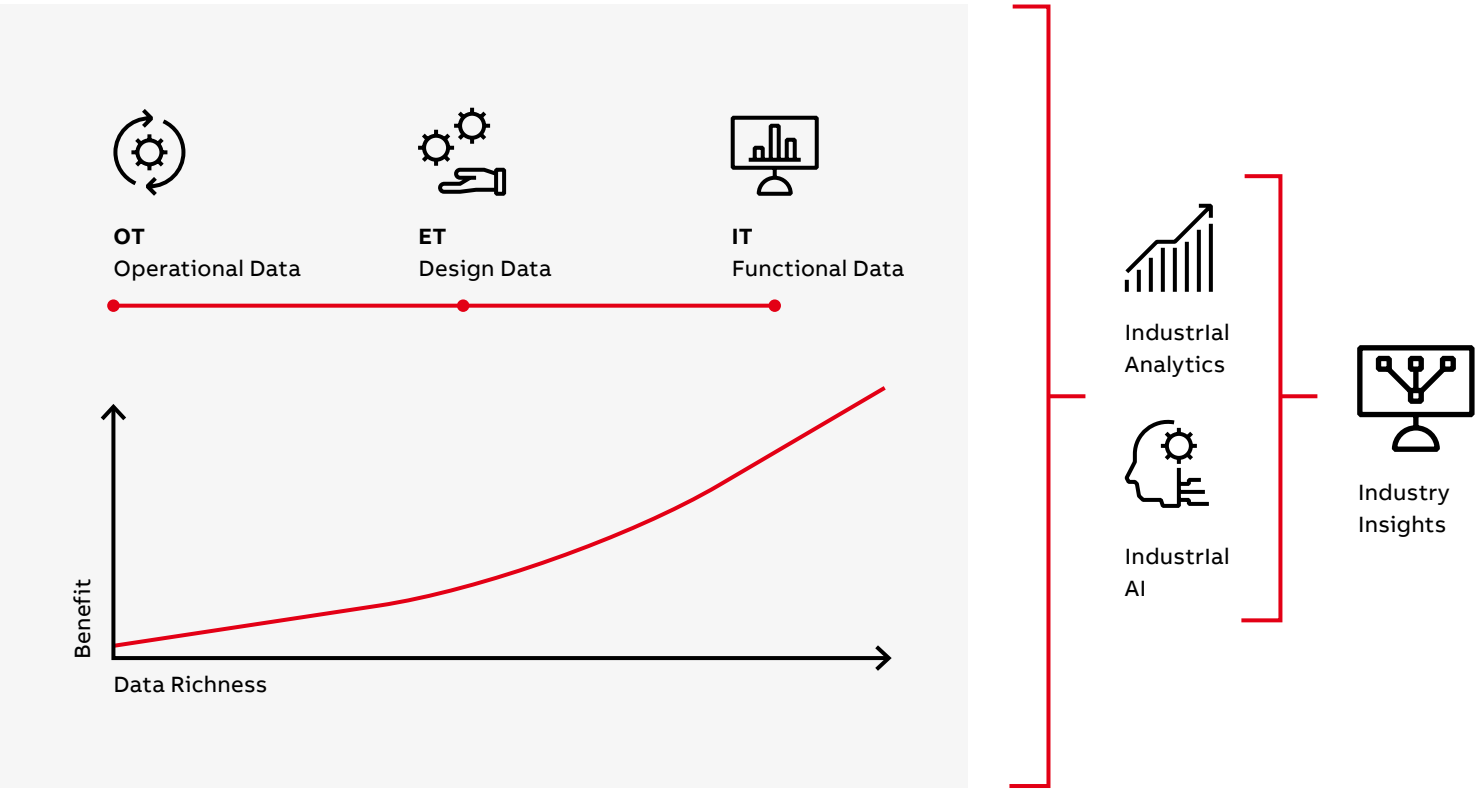
Multiple deployment options – cloud, on-prem or a hybrid solution

10

Role based analytics with multi-channel delivery

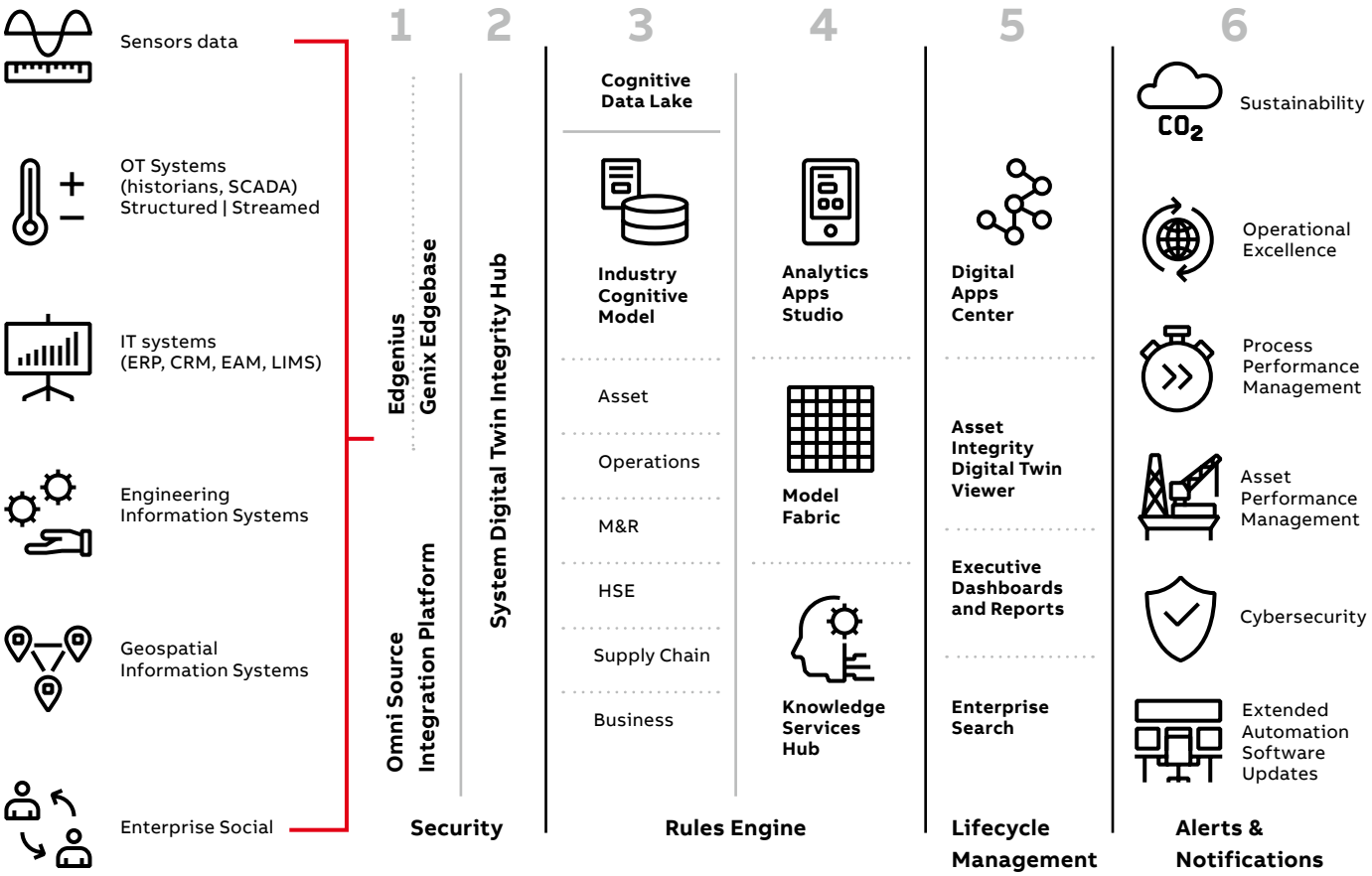
Unlocking data potential with Genix

The x-factor in industrial AI is contextualized data, increasing the value of data exponentially as operational, engineering, and information technology data across OT, ET and IT systems gets contextually integrated. Contextualization helps unlock value from data currently unused for analytics – delivering actionable insights to enable performance excellence and optimized costs.



In our experience, a majority (over 80%) of asset failures occur due to the impact of related assets, process-related parameters and not adhering to critical asset management, reliability practices. Another significant root cause of asset failure is ignoring key recommendations. This implies the pressing need for all asset data to be analyzed, in context, for prediction and optimization outcomes. When such contextualized data is applied with industrial analytics, the opportunities for driving diagnostic and prognostic analysis into actionable insights become immense. Further, domain knowledge integration, together with AI / ML practices, can help enterprises move to a powerful predictive and prescriptive analytics program for optimization. With ABB Ability™ Genix, enterprises can address the needs of a wide spectrum of roles across asset reliability, maintenance, financial control, asset investment planning, operations, OEE and loss prevention.

Unlocking the value of contextualized data through IIoT, AI and actionable insights



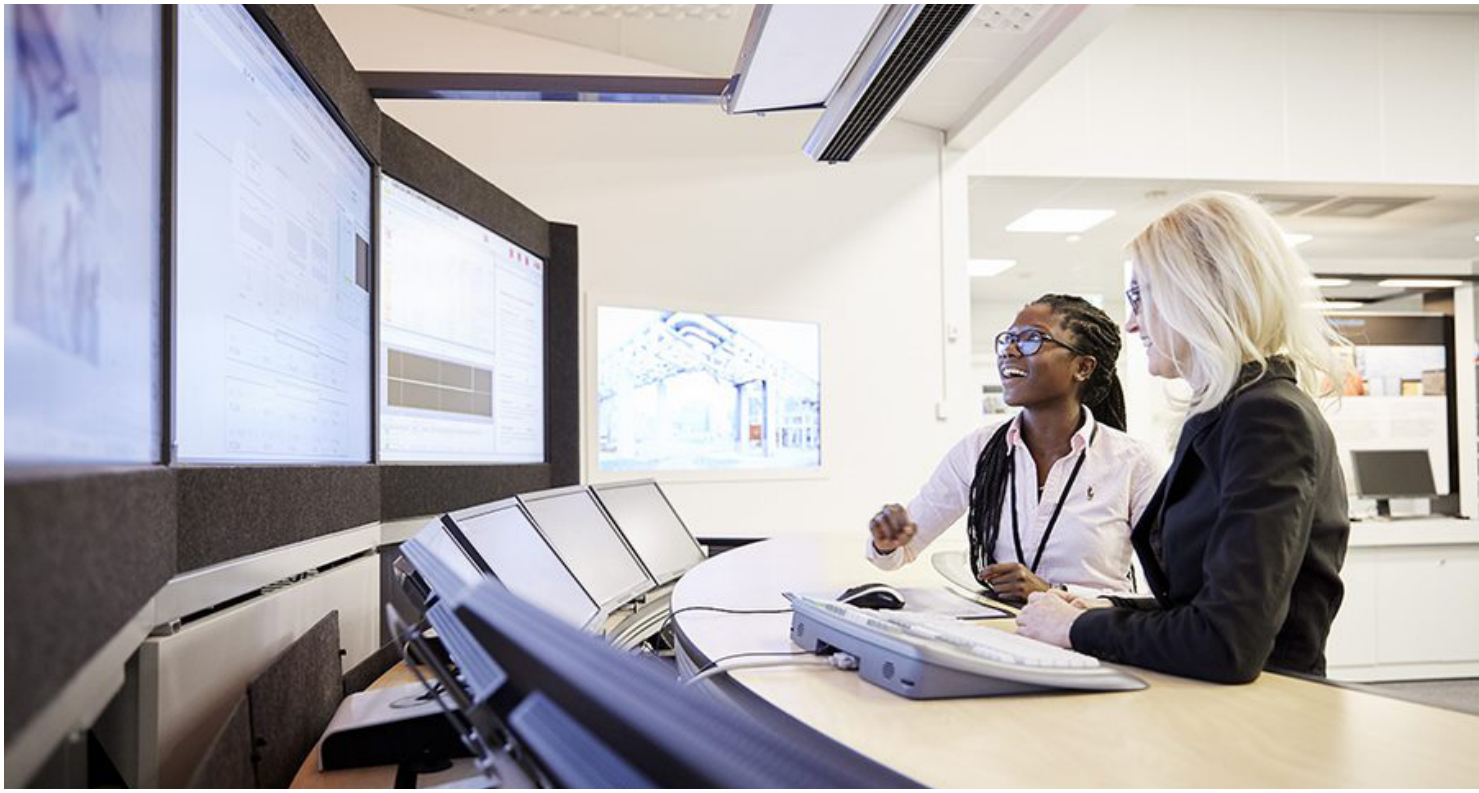
The ABB Ability™ Genix impact starts with **integrating** data – automating the collation of big data from across heterogeneous (ABB and non-ABB) source systems. The next step is to **contextualize** this data through automated building of enterprise and plant wide asset information models. Pre-built and extensible industry-standard system information **models** are then developed for advanced analytics. With this as the set-up, ABB Ability™ Genix acts as a comprehensive environment for AI/ML models, 3D twins, analytics services and apps to **analyze** the data; further using prebuilt and self-service value driver applications to **deliver** insights. Using this structure, enterprises can **optimize** operations and achieve operational excellence through integrated suites and deep cross-functional actionable insights.

The impact of ABB Ability™ Genix is at the enterprise-level, enabling value drivers critical for industries to succeed in the digital age. Starting with sources of information, where smart connectors allow for data to be drawn from a wide range of input points - from sensors through OT, IT, ET and geospatial systems to social channels.

The power of the ABB Ability™ Genix platform + suite model allows for a common set of features and pre-built functionalities driving outcomes across the key value buckets of sustainability, operational excellence, process performance management, asset performance management, cyber security, extended automation software updates. This results in the possibility of modular deployment for enterprises to custom configure the solution based on their needs and priorities.

Capabilities of the offering extend across the data integration, contextualization, modelling, analysis and insight delivery cycle in a unified and integrated manner - ensuring that ABB Ability™ Genix is able to unlock the true value of industrial analytics and AI for enterprises.

Key business value differentiators



1

Next-gen industry analytics platform – comprehensive, enterprise-scale, open standards based, self-contained, aligned with business processes of focused industries

2

Rapid ROI enabled by pre-built, modular and replicable solution with minimal configuration

3

Comprehensive coverage of AI enabled analytics models across assets, operations, safety, supply chain, maintenance, reliability, etc.

4

Rich analytics with real-time and predictive capabilities driven by AI / ML and reinforced learning for greater accuracy with self-tuning algorithms.

5

Converged software-based solutions delivering operational excellence from operations, information, geospatial and engineering domains

6

Support for self-service analytics

Key technology differentiators

Modularized architecture for flexible roll out of cohesive technology solutions

Deployable on public cloud / hybrid, on-premise - site-wise or centralized multi-site, and as SaaS/PaaS

Contextual fusion hub comprising of omni source integration platform for connectivity to a wide variety of sources covering sensors, real-time streaming data, OT data, IT/ business systems ETL and batch data, engineering as well as unstructured big data

Industry-specific cognitive data lake / data model incorporating knowledge of industry processes for optimal persistence of data permitting high performance analytics

In-built Analytics Apps Studio to build and deploy value engineering applications as well as cross-functional insights

Perform end-to-end self-service, advanced analytics using AI/ML models with graphical visualizations using Model Fabric. It allows data ingestion through Genix as well as third-party systems – allows selection, cleaning, and transformation of data; and recommends models using Auto-ML model building

System twin integrity hub to reconcile data across systems and build asset information model along with asset-IoT mapping and writebacks to source systems

Leverage additional functionalities with Genix Edgebase for omni-source integration. Use various pre-built IT, OT adapters available on Edgebase, along with other supporting modules for data publishing

Manage security frameworks for users and roles, with role-based access control for user groups. Genix provides App Registration APIs, API Security Management, Crypto API to encrypt and decrypt passwords, and APIs for token generation and validation

Leverage out-of-the-box industry-specific data models for deeper insights with extensibility for customizations

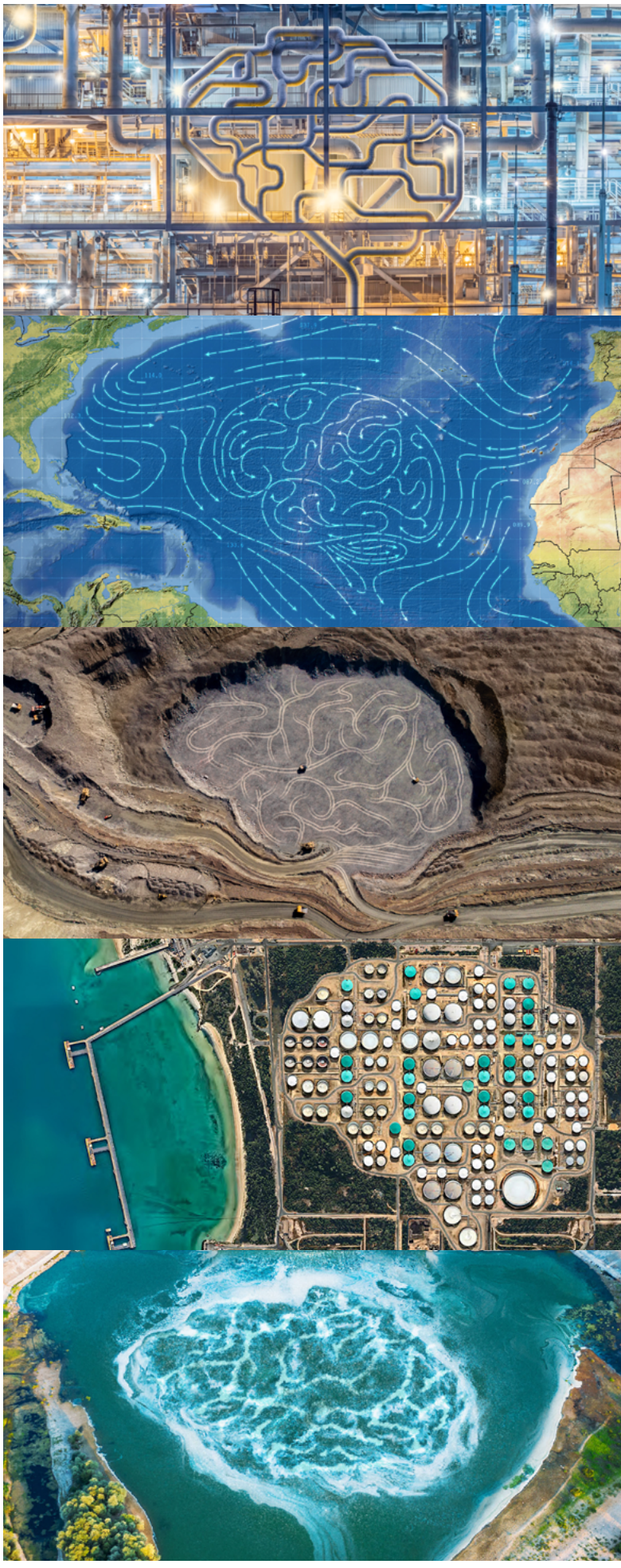
Enhance or extend pre-built industry insights through the Genix Analytics Apps Studio to build your own dashboards for analytical applications. Knowledge Service Hub exposes data from third party applications/source systems, and this can be visualized with the Dashboard Manager. Software Development Kit incorporating Application APIs for rapid application creation and deployment.

Unique value proposition of ABB Ability™ Genix Industrial Analytics and AI Suite

Driven by analytics, AI and machine learning technologies, the ABB Ability™ Genix Industrial Analytics and AI Suite combines the power of data management, domain knowledge, technology capabilities and implementation expertise. It provides data-driven services and helps connect, collect, contextualize, and analyze data from operational, IT and engineering and geospatial systems to optimize enterprise operations.

ABB Ability™ Genix provides out-of-the-box insights with industry-specific data models built into the platform.
A cognitive data model based on pre-built industry standards provides actionable insights for achieving operational performance, asset integrity, energy efficiency, sustainability, and safety, leading to improved productivity, quality, optimum utilization of plants and assets, process improvements and cost savings.

https://new.abb.com/genix



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