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ABB ABILITY™ FOR METALS

# The transformative power of Digitalization Now at your fingertips



## Know more, do more, do better. Together.

Industry 4.0 owes its quick and ready adoption to the fact that it truly transforms industrial practices, by introducing unparalleled levels of ease, predictability and performance.

As a result, Industry 4.0 can revolutionize plant operations through efficiency, safety and transparency. It is an always-on enterprise support resource for the digital era. A true enabler of smart plants.

## Going digital

ABB Ability™ is a next generation platform with a wide range of features to support process industries in harnessing the power of Industry 4.0 practices and digitalization. It is a platform that enables digital transformation through the coming together of multiple devices, systems, solutions and services on one integrated platform-agnostic system.

At ABB, Industry 4.0 and other forms of digitalization come to life on a platform called ABB Ability™. Underlined by the promise of real, measurable impact, ABB Ability™ is a platform with a range of features that help process

industries make a seamless transition to the digital era. With its flexible, open architecture, ABB Ability™ is helping manufacturing enterprises benefit from the disruptive power of digitalization.

## The ABB Ability™ manifesto for metals

1

Smart factories, proactive assets driven by intelligent components moving to a predictive maintenance regime

2

Seamless data integration with ladle and heat tracking for maximized operational efficiency

3

Ability to gain complete control across the value chain through comprehensive real-time data visibility

4

Bringing together the power of big data, AI, analytics and machine learning for real-time actionable insights



## Real value through transformation

As enterprises adapt to new methodologies and frameworks to remain competitive, ABB Ability™ provides a platform, built on deep domain experience, with a complete productivity-oriented solution suite.

Are you able to use the power of analytics and complete planning to drive profitability?

Is your value chain aligned to optimizing costs and energy to help build market competitiveness?

Are you getting enough insights, in time, to ensure productivity enhancement?

Are your systems and processes aligned for zero risk operations on quality and safety standards?

How responsive and reliability-oriented is your manufacturing enterprise?

Find the answers with ABB Ability™



<https://new.abb.com/abb-ability/>

### Operational benefits



#### Ease

At your fingertips



#### Predictability

At your fingertips



#### Performance

At your fingertips

### Intelligent plant

At your fingertips

## Control at your fingertips

Self-reporting assets driven by machine learning.

Proactive performance tracking of parameters across the value chain. And the introduction of future-ready practices such as predictive maintenance.

ABB Ability™ is inherently designed for improved cost efficiency, resource optimization and a highly responsive operational environment

### ABB Ability™ Overview

ABB Ability™ is the next generation productivity transformation platform from ABB. The platform has been designed using domain knowledge in diverse sectors, including metals, and as an extension of ABB's path-breaking automation solutions.

The core philosophy of the ABB Ability™ platform is to aggregate islands of automation into one, powerful resource and ensure interoperability between diverse systems and devices at the plant level.

ABB Ability™ helps process industries introduce practices such as Industrial Internet of Things (IIoT), artificial intelligence and big data to propel them into the digital era.

### Business benefits



#### INCREASED PROFITABILITY



#### PRODUCTIVITY ENHANCEMENT



#### SAFETY STANDARDS



#### MARKET COMPETITIVENESS



#### MANUFACTURING EXCELLENCE

## ABB Ability™ – transforming the metals industry

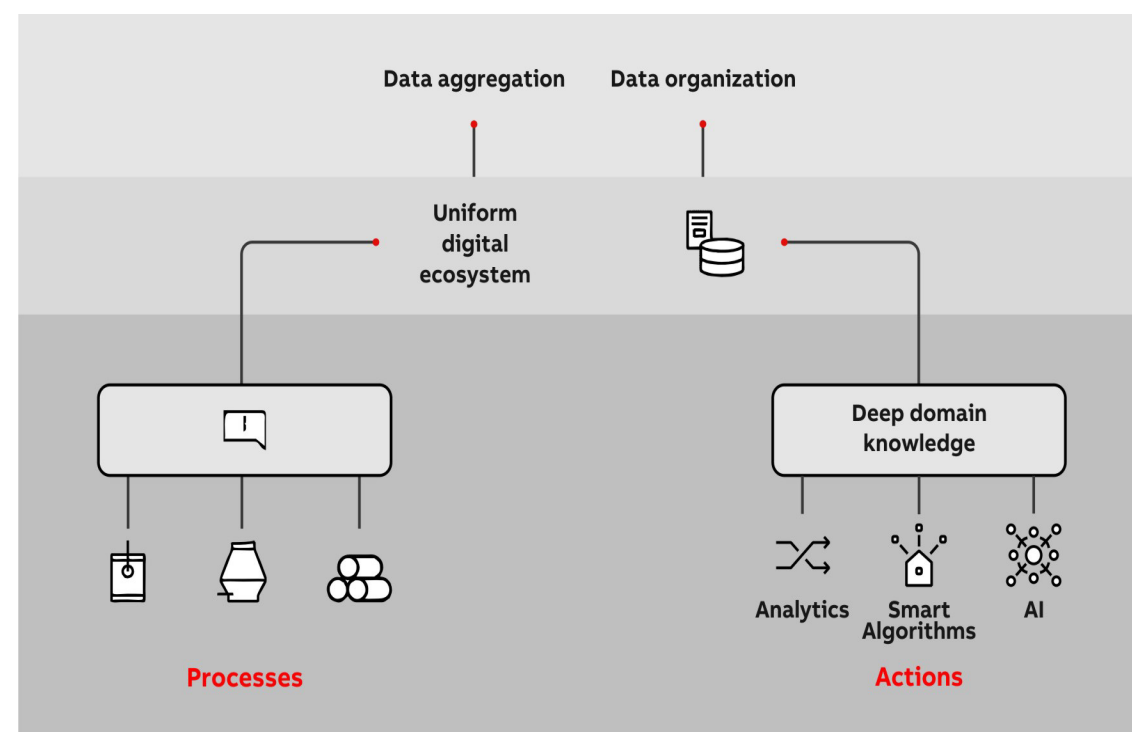
The ABB Ability™ Performance Optimization for steel melt shop solution powered by the ABB Ability™ platform enables logical tracking and movement planning of ladles, cranes and transfer cars – using a tracking engine, scheduling engine and thermal engine to create perfectly choreographed harmony

ABB Ability™ is a platform-agnostic offering from ABB. With this offering, we continue to create value for all process industries, including metals. ABB Ability™ has been designed specifically for the new connected world - helping enhance asset performance, extending asset life and contributing to increased productivity, return on asset investment.

From ore to shipped product, ABB Ability™ offers smart solutions to maximize productivity in

metals plants. By creating one integrated platform to unify data from diverse hitherto disconnected sources across the value chain, ABB Ability™ enables true transformation.

All driven by ABB's complete knowledge of the metals value chain and proven capabilities to support diverse requirements of the industry.



## The smart metals factory powered by ABB Ability™

The ABB Ability™ platform offers a host of customizable solutions already deployed at plants across the globe - to better monitor, control and optimise the complete value chain at each step.

### Plant-wide data integration and analytics



Microsoft Azure cloud services for machine learning, with power BI for visualization, used to deliver an analytics package for quality deviation to a customer in Finland

### Bar Mill data configuration and analysis



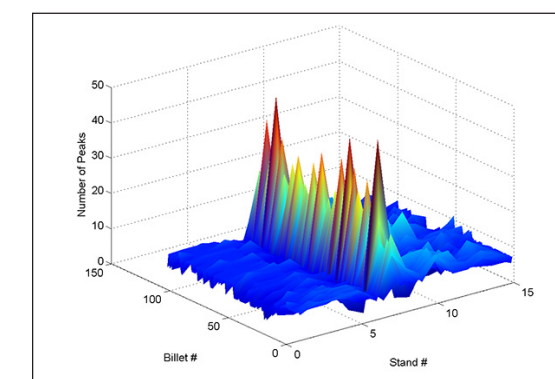
Analyzing data of a complete mill and running data configuration processes to identify opportunities for improvement, loopier tuning temperature profile of billet, stand performance improvement and tracking issues due to HMDs

### Wire Rod Mill fingerprint for head positioning



Analysis of data from fast data logger systems to fix fingerprint for head positioning, thereby improving control philosophy of system for a customer in India

### Wire Rod Mill fingerprint for drive oscillation



Using general fingerprint to identify oscillation issues for a drive and address impact drop, tracking issues that effected shear cut performance



## ABB Ability™ for metals – solution highlights

Machines that think for themselves, let you know when they need maintenance, work seamlessly in harmony – all built on a set of algorithms and intelligence that is machine learning.

Developed using inherent knowledge of what defines success in the metals industry, explore the power of machine learning – a powerful feature of the ABB Ability™ platform



### Integrating islands of automation

ABB Ability™ introduces a common data aggregation layer, collecting data from various plant processes into a well-structured data organization with comprehensive analytics capabilities



### Ease of use

ABB Ability™ provides a platform for multiple instruments including handheld devices, with intuitive dashboards for effective data reporting and insights



### An always-connected ecosystem

A hybrid connectivity model using on-premise and on-cloud resources to ensure that the platform is always available, providing real-time insights for better decision making leading to higher asset reliability



### Data security

ABB's commitment to data security backed by a cybersecurity manifesto ensures better cyber risk mitigation



### Platform agnostic, complete interoperability

Built on a seamless architecture, ABB Ability™ is platform agnostic with a wide variety of data connectors and complete interoperability between devices and equipment



### Collaborative working

A common cross-functional data aggregation and analytics resource implies insights that are focused on one result – driving profitability for metals industries



### Insights for real-time operations

Real-time data availability means real-time condition monitoring and self-reporting assets with advanced analytics and artificial intelligence to support remote monitoring and diagnosis



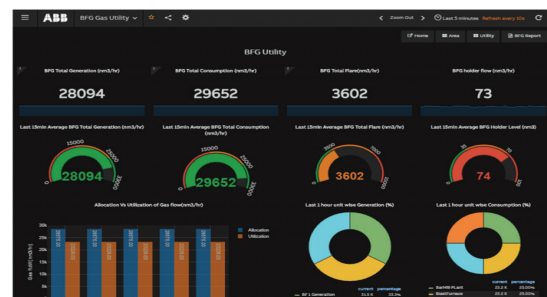
### Result-oriented

ABB Ability™ puts all resources at your fingertips to enable ease, predictability and performance

## ABB Ability™ at work

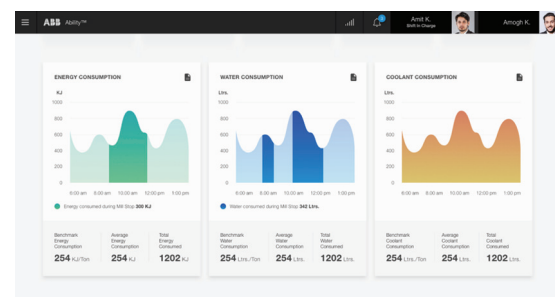
### ABB Ability™ Data Analytics platform for metals | India

The ABB Ability™ platform implemented for a leading Indian steel corporation has transformed the entire value chain. The platform includes a centralized command center, conceptualized and implemented to view operations across the value chain and enhancing efficiency of plant operations planning through data collection, analysis, visualization across 35 facilities. A wide range of diverse ABB / non-ABB control systems have been integrated onto one platform leading to maximized visibility and predictability of downtime.



### ABB Ability™ Manufacturing Operations Management for metals for integrated production management | Saudi Arabia

ABB Ability™ has been implemented at the largest fully integrated plant of a leading global manufacturer of primary and fabricated aluminum. The platform helps leverage efficiencies by integrating mine, refinery, smelter and rolling mill. Further efficiencies are being realized from low energy costs embedded in a brand new infrastructure environment. The impact of the ABB Ability™ implementation extends across production planning, quality, process data and overall equipment efficiency, amongst others.



## Understanding Digitalization Readiness

Getting to the stage where a plant can gain maximum results from digitalization demands planning a business-relevant and executable path to digitalization. The ideal stage to start planning the digitalization journey for your plant would be when it is locally automated and ready for next steps as per the ABB Ability™ digitalization roadmap.

## Glossary of Digitalization Terms

### Industry 4.0

Also called the fourth industrial revolution, it is the new paradigm in manufacturing technologies which is built on automation, data harnessing, analytics and self-reporting assets

### Internet of Things (IoT)

A network of devices built around electronics, sensors, actuators connected together to interact and exchange data. Industrial IoT (IIoT) refers to such networks built for use in manufacturing

### Sensors

Devices used for measuring parameters or changes in parameters and automatically transmitting them electronically

### Big Data

Large and complex data systems, often fed by several data points and sources

### Value Chain

The entire set of activities, including core manufacturing and other supporting processes, that comprise the chain from start to finish in a manufacturing environment

### Artificial Intelligence

Intelligence, derived as a result of programming and analytics algorithms, built into and derived from machines

### Machine Learning

Usually a category within artificial intelligence, refers to the algorithms built into software to help machines expand their repertoire of self-performed tasks by drawing patterns and automated inferences



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