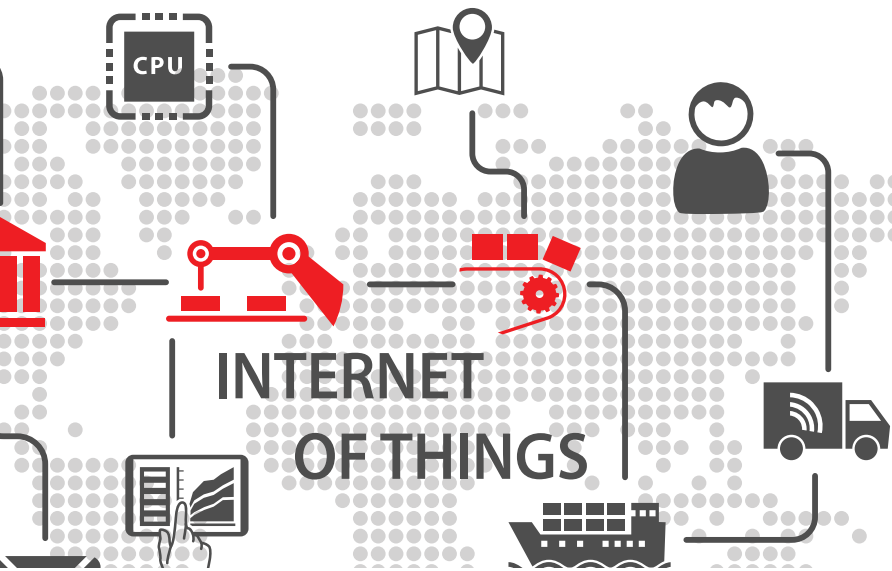# ABB Ability
# Unlocking the true value of smart sensing devices through digitalization

By 2020, the number of connected things will triple from 6 billion to 20 billion. Digitalization is creating new business opportunities and alternative business models.

**Measurement made easy**

—
**ABB Ability combines physical things, digital technologies and expertise to deliver higher productivity**

## What is digitalization?

Digitalization is the application of digital technologies to create new opportunities to generate value, for example, connecting sensors to cloud and supplying measurement data rather than devices to customer, for example, measurement as a service.

In this interview, David Lincoln introduces the digitalization of measurement and analytics and the benefits of ABB Ability™.

**David Lincoln**
Measurement & Analytics Digital Lead

## What opportunities does it offer businesses? Why is it important?

Digitalization is touching every aspect of our lives, many companies are still trying to understand where to focus their efforts in building a digital strategy that yields results. Looking at how production processes have evolved, higher levels of automation are typically used to help drive productivity and quality gains.

Data coming from the 'operational technology' is not typically integrated into a business's IT network. Internet of Things (IoT) technology is now helping to bridge that gap meaning that companies can have tighter integration of production data.
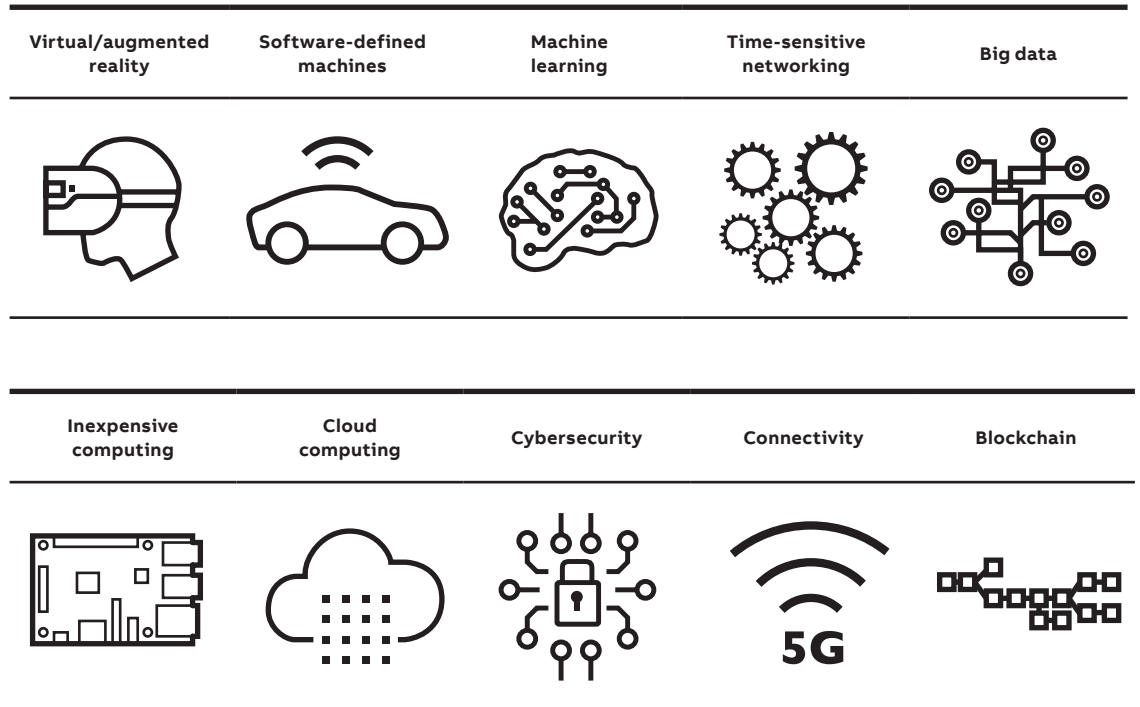
This means quality issues can be detected and managed much sooner, multi-site production facilities can be benchmarked against each other and production loadings optimized to give the highest overall operational efficiency – this can give a company a key competitive advantage.

—

# What are the trends in the digitalization industry?

There are a lot of digital technologies developed for the consumer industry that are now being adopted by industry

—
**01: Digital technologies are driving new innovation. Media is focused on B2C, but the 'killer app' is in B2B.**

Applying machine learning technology to identify patterns in data is extremely popular these days, additionally, the use of augmented reality to de-skill maintenance tasks and help visualization of processes is seen as a great help to industry.

| Virtual/augmented reality | Software-defined machines | Machine learning | Time-sensitive networking | Big data |
|---|---|---|---|---|

| Inexpensive computing | Cloud computing | Cybersecurity | Connectivity | Blockchain |
|---|---|---|---|---|

—
01

—
02: Novel drone-based
gas analyzers find
leaks anywhere.

—

## What is ABB Ability? What are the benefits?

ABB Ability is our unified cross-industry capability from device to edge to cloud, ultimately it's about the 200+ solutions we offer to our customers, solutions as diverse as helping captains safely pilot their ships with real-time vision systems to enhancing the flatness of strip metal in rolling mills and ultimately increasing its value.

It's about taking our expertise, physical devices, connectivity and software to deliver customers solutions that enhance their productivity or safety.

—

ABB Ability solutions are built on a common platform using Microsoft components which also gives us a benefit in terms of security, scalability and the speed of deployment.



—
02

—
03: ABB launches the world's first digitally-integrated power transformer. The transformer is equipped with a digital hub, leveraging a portfolio of smart devices, including CoreSense™ M10, a multi-component dissolved gas analyzer.

—

## How can ABB Ability help the customer?
## What advantages does it provide for the customer?

The solutions we offer can help customers at every lifecycle stage of their business from the initial design, build and commissioning phase right the way through to maintenance and decommissioning.

ABB has been helping its customers for decades and already has a huge number of connected devices, so taking these connected devices and applying established digital technologies and expertise can further assist customers to achieve tangible benefits for their business.

—

The advantage of working with ABB is the peace of mind you are working with an established digital company that understands industry, products and solutions.



—
03

—
04: ABB digital
solutions reduce site
maintenance at Imperial
College London's
award-winning carbon
capture pilot-plant.

—

## What does digitalization mean for ABB Measurement & Analytics?

Measurement & Analytics is in the fortunate position of having a huge array of digital smart sensors covering physical measurements such as force, pressure, temperature, flow and level. We have a full portfolio of process analyzers for gas, liquid and solids used for applications such as gas emission monitoring and water quality analysis.

We have always been working on enhancing the connectivity of our devices and ensuring 'Measurement made easy' but the real area for digitalization is in moving further into the supply of data and offering our customers applications that enhance the value of their measurement data.

—

Our vision is to offer customers a lower cost of measurement with additional process insight to increase productivity.



—
04

—
05: ABB Ability mobile gas leak detection introduction by Doug Baer.

—

### Tell us about the apps ABB Measurement & Analytics is developing?

We have a range of app developments on-going including the remote management of on-shore well pads, cloud-based device verification to enhance accuracy and availability of instrumentation. However, my favorite is the drone based gas leak detection system which combines our highly sensitive laser-based sensing technology developed for measuring greenhouse gas emissions with cloud computing to accurately pin-point the location of gas pipe leaks from the air.

Doug Baer | General Manager | Laser Analyzers



—
05: Watch the video

—

### What industries and applications will benefit from the apps? How?

The solutions we develop are not generally specific to a particular industry, for example, our continuous gas analyzer solutions are used in many industries to reduce pollution levels and enhance process performance, here our apps are being used to remotely monitor their performance to reduce the need for site service visits and help remotely troubleshoot problems when things go wrong.

—

### Tell us about smart sensors? What are the higher-level systems that they are connected too?

Smart sensors have a micro-processor that enables them to perform multiple functions, for example, generate alarms when measurements are outside of a permissible range, drive a display and communicate with a higher level system such as a PLC, DCS system, on premise gateways or direct to cloud.

Typically, ABB devices are smart enough to sense more than just their standard measurement, for example, electromagnetic flow meters like ProcessMaster can detect gas bubbles in pipes, Coriolis mass flow meters can additionally output temperature measurements. Unlocking this data can be advantageous for customers trying to extract insights about how processes are performing.

—
**06: ABB Expert
performing a
comprehensive health
check on a Stressometer
system to enhance
metal rolling mill
performance and yield.**

—

# What does digitalization mean for the future?

Every business is on a digital journey and is busy trying to figure out the value digitalization will offer in future, it is a disruptive technology which will offer many opportunities to gain further insights into how to optimize operations.

Digitalization is today enabling higher levels of autonomy which will lead to higher levels of productivity going forwards, but it is impossible at this stage to predict what areas of industry will see the biggest revolution.

—

For a smart sensing company like ABB Measurement & Analytics, it is likely more integrated measurement points will be required to assist with automation but ultimately using our expertise to offer solutions will be the key to unlocking the true value from the devices.



—
06

Web page