



## How IoT enabled doors create smarter buildings

Implementing IoT, data and augmented reality  
to optimize your building's entryways

**ASSA ABLOY**  
Entrance Systems

# Tabel of contents

Start collecting data	3
Letting data drive your decisions	4
How to register data	5
More than just a cost-saver	7
Introducing ASSA ABLOY Insight	8
ASSA ABLOY Insight delivers	9
Using remote access	10

## Introduction

You've probably heard a few of these buzzwords when researching automated entrance systems for your business: Internet of Things (IoT), Big Data, Augmented Reality (AR). But did you know these are already game-changers and disrupting many of the current ways of doing business? Companies who've embraced these technologies are receiving insights into all their operations and using available real-time data to base their business decisions on facts rather than gut-feelings.

IoT and connected devices are nothing new. More than 15 billion devices were linked to the internet by 2015. By 2025 this number is expected to exceed 75 billion<sup>1</sup> – we are now passing the stage where IoT is just an abstract tool of the future, and at some point, you have to join the game or be left out. Not investing in these new developments and innovations could have future economic consequences.

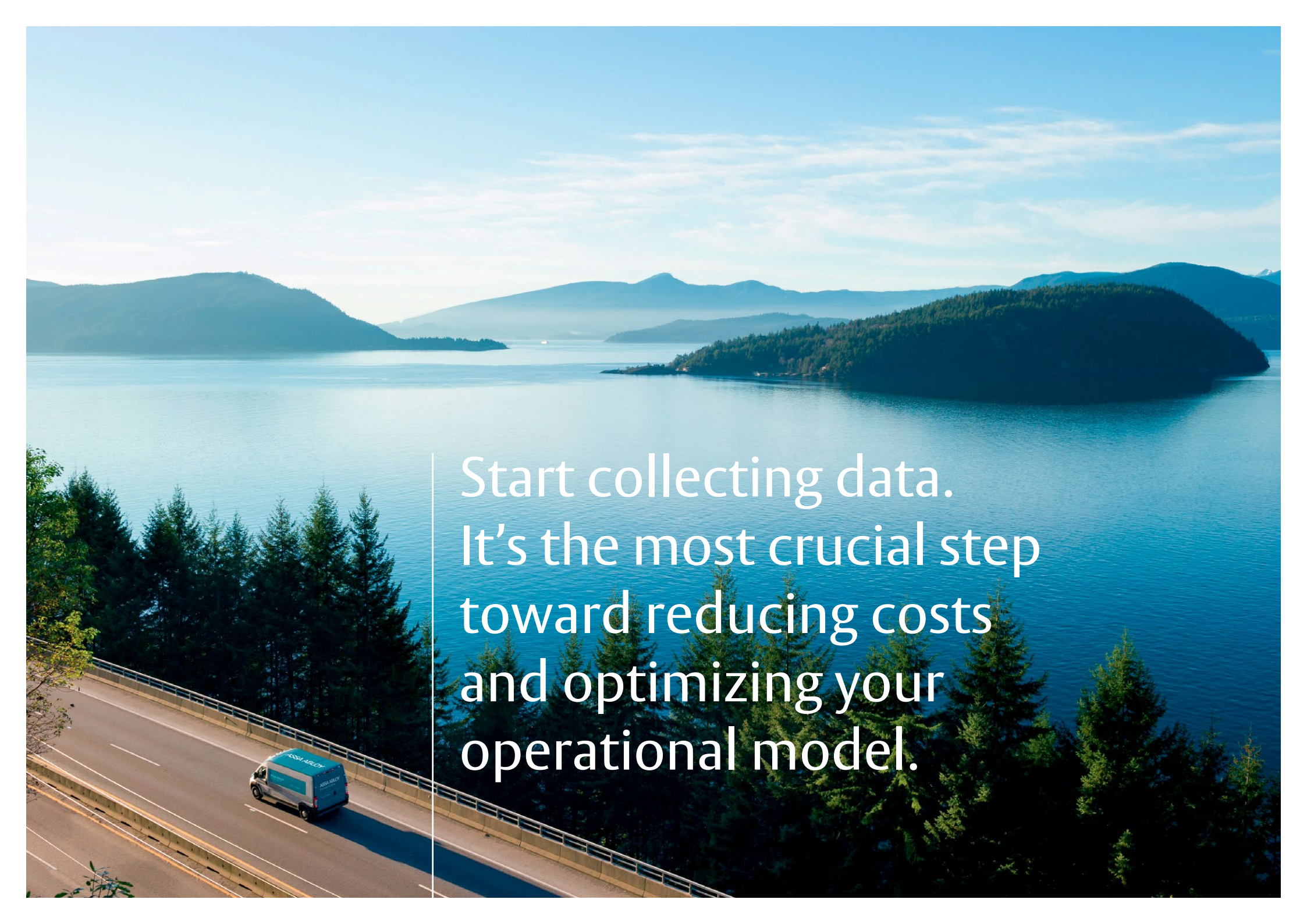
This paper will guide you through some of the essentials we believe will be critical for your company in this digital age and how we at ASSA ABLOY Entrance Systems have utilized these latest industry technologies to develop an easy to use all-in-one platform to monitor and service your automated doors.

We can ease the process of servicing your automatic doors through innovation. Mainly, by helping you with information about when to service and maintain all of your automated entrances and when to schedule annual maintenance visits before critical equipment breaks or wears out.

In this paper, we'll present the initial steps for you to start using more data, including:

- What data is most important
- What the benefits of embedding more connected assets and devices are by predicting your maintenance costs
- Using existing available data to your advantage
- How to get started

<sup>1</sup> Statista – number of connected devices worldwide:  
<https://www.statista.com/statistics/471264/iot-number-of-connected-devices-worldwide/>



Start collecting data.  
It's the most crucial step  
toward reducing costs  
and optimizing your  
operational model.

## Letting data drive your decisions

It all starts with the firm belief that data will be the future for your organization. Sound simple? Unfortunately, it's not quite so easy. According to Harvard Business Review, most companies are interested in implementing a more data-driven culture. Still, only a third of companies succeed, often finding it difficult to enact best practices<sup>2</sup>.

This first step is to consider data a critical tool to gain insights about your assets and automatic doors. As our job involves being out in the field to review our products' usage, we collect new information and data every day. At ASSA ABLOY Entrance Systems, our service technicians register all critical data such as the location of an asset, asset type, worksheets, breakdown reports, spare parts used, invoices, and more.

In our experience, collecting data on entryways allows you to go back and review facts and information regarding a specific automatic door – helping you guide your internal management decisions and build a foundation for future investments. If your organization has yet to register data on an asset level, it's essential that you begin to do so in an accurate and coordinated manner.

## What's the essential data to focus on?

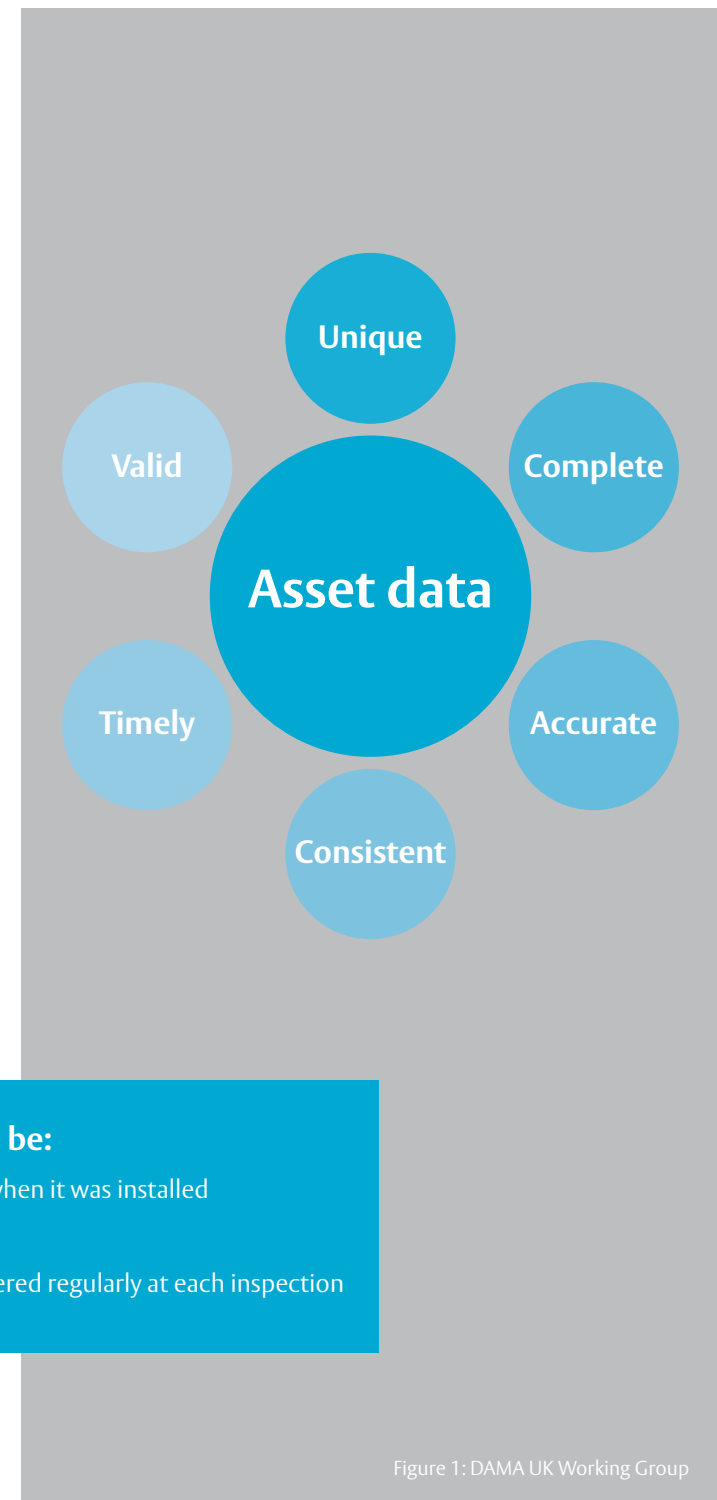
Gathering data on an asset level requires your constant attention. You'll need to have your collecting processes in place to collect the data, but more importantly, you need to make sure to register the correct data. In other words, the next step will be to gather data that is unique, accurate, complete, consistent, valid, and timely.

By **unique** data, we mean solely for a specific asset. For instance, when you replace an existing door with a new one, the location of that door will not change. But all history of the replaced entry needs to be stored elsewhere or deleted to prevent duplicate assets in your database. Advising on repairing or inspecting an automatic door that's no longer there could be embarrassing and interpreted as unprofessional.

You'll also need to make sure your data is **valid** (matching the field format) and that it's **timely**. In other words, this means precise real-time data. If you're unable to ensure timely data, then it gets difficult to predict when, how and which asset needs inspection or repair.

### Finally, you want critical data of your doors to be:

- **complete** – including data such as the type of asset and when it was installed
- **accurate** – ensuring the correct data is registered
- **consistent** – establishing that data on each asset is registered regularly at each inspection



<sup>2</sup> Harvard Business Review – Big companies are embracing analytics but most still don't have a data-driven culture: <https://hbr.org/2018/02/big-companies-are-embracing-analytics-but-most-still-dont-have-a-data-driven-culture>

Figure 1: DAMA UK Working Group

## How to accurately register data for each of your assets

Accurately registering the data for a specific asset is possibly the biggest challenge in collecting data. The main reason why is because you depend on a manual entry by either your service engineer or a back-office employee. A QR code or any other identifier can solve this issue. Whenever you enter new data, like a part replacement or a resolved breakdown, you can require the engineer to scan the QR code for that specific door. This way, you ensure the data will end up with the correct asset.

Still, for many businesses, this is not routine. Say an engineer has to service multiple automatic doors at a single location. Without the use of required identifiers like a QR code, there's a risk that the engineer registers data in the system only after completing the work. This often results in registering the right data for the wrong door – leading to customer complaints and incorrect decisions on required investments in their assets.

Using a QR code to report a breakdown helps facility managers to report a breakdown quickly. They can also send the technician to the right door with the correct spare parts and receive prompt feedback on the progress in resolving the issue – reducing downtime and operational costs.



## Use data to reduce time to fix while increasing first-time fix rates

Once your company is committed to gathering essential data for your building's doors and actively pursuing and registering new data, you can start to employ it. At ASSA ABLOY Entrance Systems, we've been committed to gathering data for our automatic doors for more than a decade, putting us at the forefront of automated door maintenance – both in speed and first-time fix rates.

## Using IoT as the catalyst for reducing cost

The rising technologies of IoT can create a network of connected physical and digital devices to predict and plan for the next time your assets need maintenance or inspections. Predictive maintenance enables you to schedule service of your building's assets and reduces the risks and costs of a breakdown. In fact, a recent report from Deloitte and PricewaterhouseCoopers found that predictive maintenance can reduce overall maintenance cost by 5 – 10%<sup>3</sup>, while also showing improvements to uptime by 9% and extending the lifetime of ageing assets up to 20%<sup>4</sup>.

<sup>3</sup> Deloitte – Making Maintenance Smarter: [https://www2.deloitte.com/content/dam/insights/us/articles/3828\\_Making-maintenance-smarter/DUP\\_Making-maintenance-smarter.pdf](https://www2.deloitte.com/content/dam/insights/us/articles/3828_Making-maintenance-smarter/DUP_Making-maintenance-smarter.pdf)

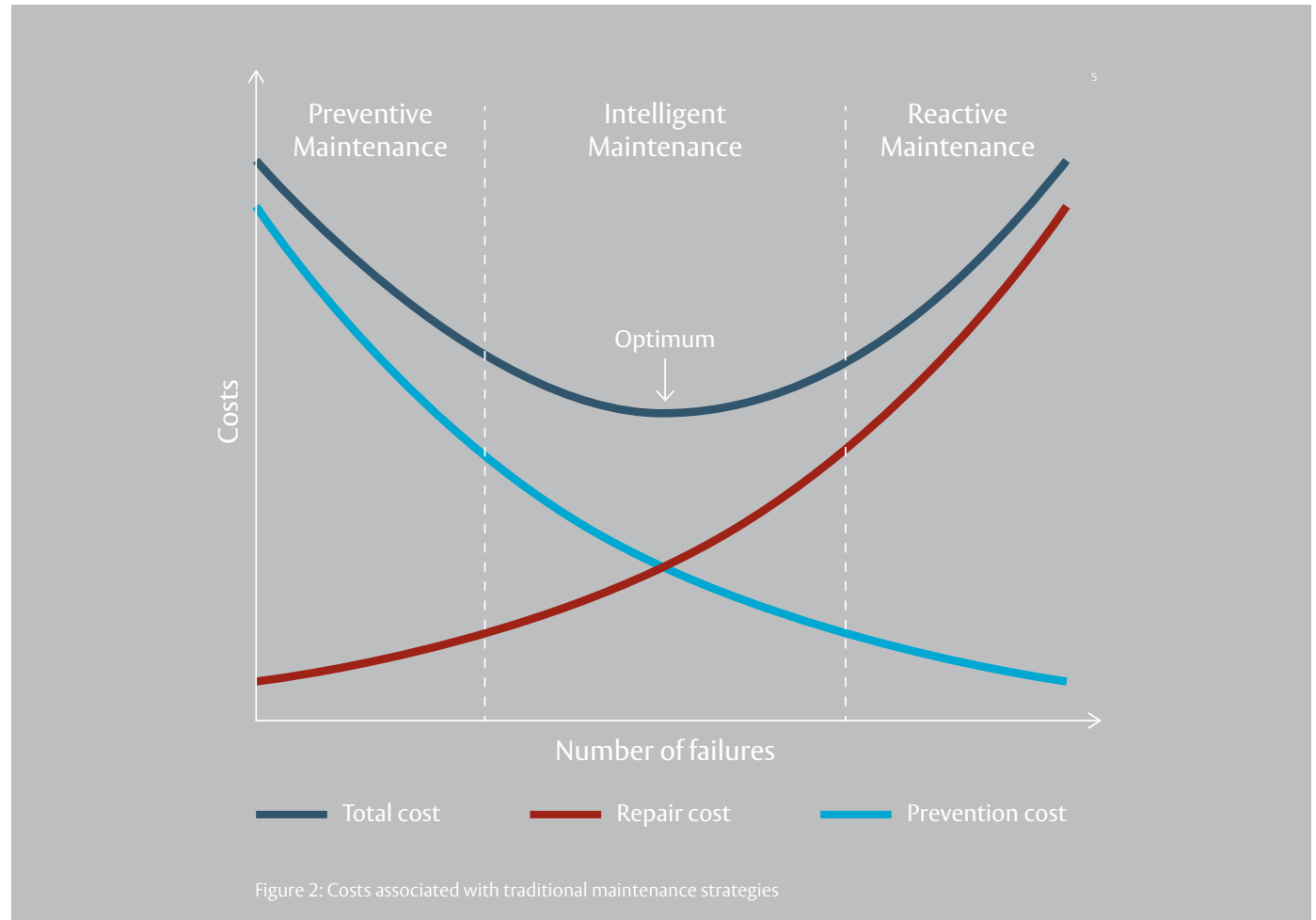
<sup>4</sup> PricewaterhouseCoopers – Predictive Maintenance 4.0 - beyond the hype: PdM 4.0 delivers results: <https://www.pwc.nl/nl/assets/documents/pwc-predictive-maintenance-beyond-the-hype-40.pdf>

Embedding IoT in your organization can be a challenge, and some of the latest doors on the market are beginning to recognize this and register usage data automatically. IoT allows you to collect and organize this critical data into actionable insights about your automatic doors and docking solutions that can be sent to you on a monthly, weekly or daily report. Furthermore, by adding sensors to your existing automated entries, you can offer your company a cost-effective solution to gain data specific to your company's needs.

Before investing in an upgrade of your current equipment, you need to consider and determine the value the automatic doors bring and whether it's sensible to invest in connecting them through IoT. Often, we see that our customers' typical door equipment consists of a legacy of many different brands and types of building assets. All of which have to be connected to fully exploit the advantages of remote access to your building assets.

Once connected with the ASSA ABLOY Insight dashboard, you'll be able to see remotely if a door is open, closed, locked or unlocked. Moreover, you can track previous repairs and inspections – helping you plan for future reviews and save money from unexpected breakdowns.

Predictive maintenance uses real-time condition monitoring to evaluate an asset's performance, while an IoT connected automatic door enables you to monitor the asset remotely. The immediate effect will be that preventive maintenance costs will rise slightly, and the number of breakdowns will be reduced along with the related corrective maintenance costs – further reducing your total costs.



<sup>5</sup> Energies - Wind Turbine Condition Monitoring: State-of-the-Art Review, New Trends, and Future Challenges: <https://www.mdpi.com/1996-1073/7/4/2595/htm>

## More than just a cost-saver

Depending on the type of customer, predictive maintenance offers additional value through remote monitoring. For example, a retailer with numerous shops can use connected automatic doors to monitor when the doors are opening, along with how many people are coming and going and at what times. Access to asset data can likewise be valuable to a facility manager of a distribution or logistics center, enabling them to monitor and schedule maintenance of sectional doors at the loading bay, ensuring safer doors for workers and problem-free operation.

### With an IoT platform, the benefits range from:

- **Enhanced Security** – access the flow of staff, customers and whether your equipment has been subject to intrusion attempts
- **Increased Safety** – receive reports about recent inspections of critical systems like fire doors, peak hours of customer use, and accessibility to sensitive areas of your business
- **Performance and Maintenance** – gain valuable insights and a quick overview of all equipment statuses and usage to detect issues before they become a problem so you can service accordingly
- **Sustainability and Energy** – detect energy leakage or cold/warm intrusion to act in time to save energy and money
- **Remote Service** – our service team will guide and help you in solve the problem using remote diagnostics capabilities
- **Increased First Time Fix Rate** – connected products allow service technicians to be dispatched with the right spare parts and solutions in advance, providing reduced downtime and increasing the first-time fix rate





## Introducing ASSA ABLOY Insight

ASSA ABLOY Insight introduces a new **all-in-one platform** for customers to access critical insights into their individual door's usage and performance – allowing for more proactive solutions that save you time and money.



## ASSA ABLOY Insight delivers:

- **Higher Service Efficiency** – improve your service efficiency through intelligent planning and smarter use of resources
- **Detailed Business Insights** – track doorway usage, foot traffic, equipment age and lock status, plus receive actionable insights to help guide your decisions and optimize your business
- **Easier Total Cost of Ownership (TCO) Management** – Avoid unplanned maintenance and stay in control of your equipment’s lifecycle costs by tracking expenses and budget

## Security

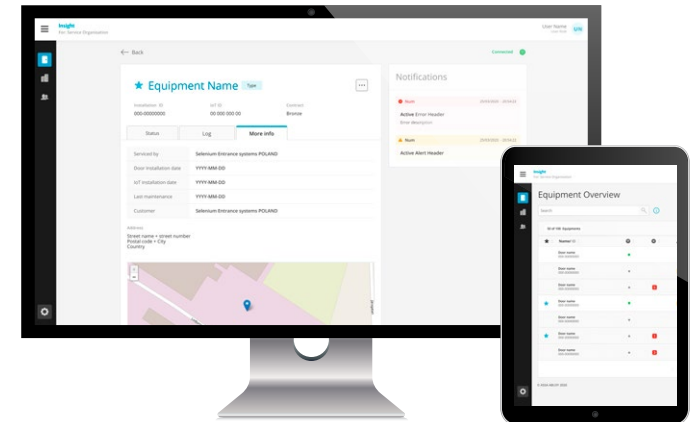
- Monitor access to your building
- Door lock status
- See if entrances have been subjected to intrusion attempts
- Alarm activated if doors are open too long or open when they shouldn’t be
- Data on the number of people exiting from the incorrect door
- People count data to understand peak hours and plan staffing

## Performance and maintenance

- Fast overview of door status (typical asset management information)
- Track the status of errors and incidents
- Understand why specific errors occur (for instance if a battery fails on an emergency door or a sensor becomes blocked and stops working)
- Information on completion of planned maintenance (for compliance)
- KPI reports (errors, uptime, response time, first-time fix rate)
- Reports on door usage to identify high-traffic doors

## Sustainability

- Sustainability insights based on door open-time data
- Understand energy leakage costs and indoor climate consequences
- Opportunity for integration with environmental sensors
- Product energy parameters and classification insights



ASSA ABLOY Insight



## Using remote access under challenging circumstances

**With ASSA ABLOY Insight**, your facility managers will be remotely guided by our experts in how to access the diagnostics of your doors – with step-by-step instructions on how to repair any problems. However, European legislation (EN16005) requires our physical presence at an automatic entry for altering any factory settings or resetting it.

During this period of COVID-19, we have seen the increased value of remote access, as we're able to assist with our customer's problems without being physically present. Remote assistance allows us to respect the restrictions of COVID-19 while minimizing downtime and service cost for repairs and breakdowns. In the early period of COVID-19, our 24-hour Remote Service Desk helped ASSA ABLOY Entrance Systems solve more than 25% of all problems remotely.

We're able to employ secure remote access through a smartphone camera and Augmented Reality without the need for downloading any additional software or apps. Customers will receive an invite link and be guided by our support team via the camera on their smartphone or tablet. An ASSA ABLOY Service technician can also provide clear voice instructions and visual guidance by drawing on the screen or by hand gestures.

## Data is key

Remember, it all comes down to data. Collecting accurate data allows you to make critical decisions regarding your entry doors that can affect your business. By utilizing IoT, you can create a system of connected doors and digital devices to collect data, monitor usage and plan for the next time your doors need maintenance or inspections.

ASSA ABLOY Insight employs the benefits of IoT to offer your company an all-in-one solution to reduce door breakdowns, downtime and operational costs, while increasing security, energy efficiency and performance. With ASSA ABLOY Insight, you'll better understand your company's needs today, tomorrow and in the future.

**Get in touch with our knowledgeable IoT sales team and see how ASSA ABLOY Insight can better connect your business.**

The ASSA ABLOY Group is the global leader in access solutions. Every day, we help billions of people experience a more open world.

ASSA ABLOY Entrance Systems provides solutions for efficient and safe flow of goods and people. Our offering includes a wide range of automated pedestrian, industrial and residential doors, loading dock equipment, perimeter fencing and services.

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