



Honeywell Forge Digitized Maintenance

Transforming the equipment maintenance model



**HONEYWELL
FORGE**



Microsoft



Agenda

1. Costs and causes of unplanned downtime
2. Challenges of scheduled maintenance
3. Introducing Honeywell Forge Digitized Maintenance
4. The power of end-to-end Azure solutions in the cloud
5. Opportunities

The costs and causes of unplanned downtime

71%

of managers lack awareness of when assets will need maintenance¹

> 80%

of companies have experienced an unexpected equipment outage within the past 3 years²

\$260K

is the average cost per hour of unplanned downtime³

1 "After the Fall: The Costs, Causes & Consequences of Unplanned Downtime," Vanson Bourne and ServiceMax, a GE Digital company

2, 3 "How Much Is Equipment Downtime Costing Your Workplace?" iOffice

Scheduled maintenance model challenges

Manual diagnostics

Scheduled equipment inspections are an expensive and inefficient strategy for detecting or responding to equipment malfunctions. Scheduled maintenance may discover faults before a major outage, but not before damage has already been done.

Limited visibility and accountability

Hour-based, planned maintenance contracts provide little transparency into maintenance crews' performance or ROI.

Aging workforce

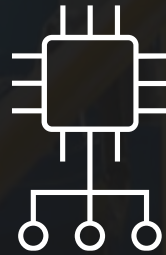
A diminishing pool of skilled and experienced workers calls for innovative digitization to ensure business continuity.

Introducing Honeywell Forge Digitized Maintenance

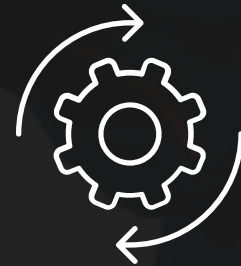
Transforming the equipment maintenance model



Connect
systems securely



Collect
intelligence



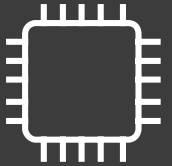
Optimize
operations

Honeywell Forge Digitized Maintenance

Optimizing building equipment maintenance models through the power of the cloud

Easy deployment

Auto-discover and seamlessly connect within minutes to building systems and/or BMS using this system-agnostic solution



Smart connectivity

Capture comfort performance, asset health, and energy performance KPIs



Powerful cloud

Use machine learning to analyze data, identify performance anomalies, offer resolution recommendations, and create service cases



Actionable insights

Deliver meaningful insights, pre-fault alerts and service tickets in a web-based dashboard or through a Honeywell app



Business optimization

Transform business models and save money by shifting from hourly to KPI-based service contracts, improving asset performance, and extending equipment lifecycles



Connect



Establish a single, secured connectivity strategy between all systems and buildings.

Deploy a system-agnostic solution fast

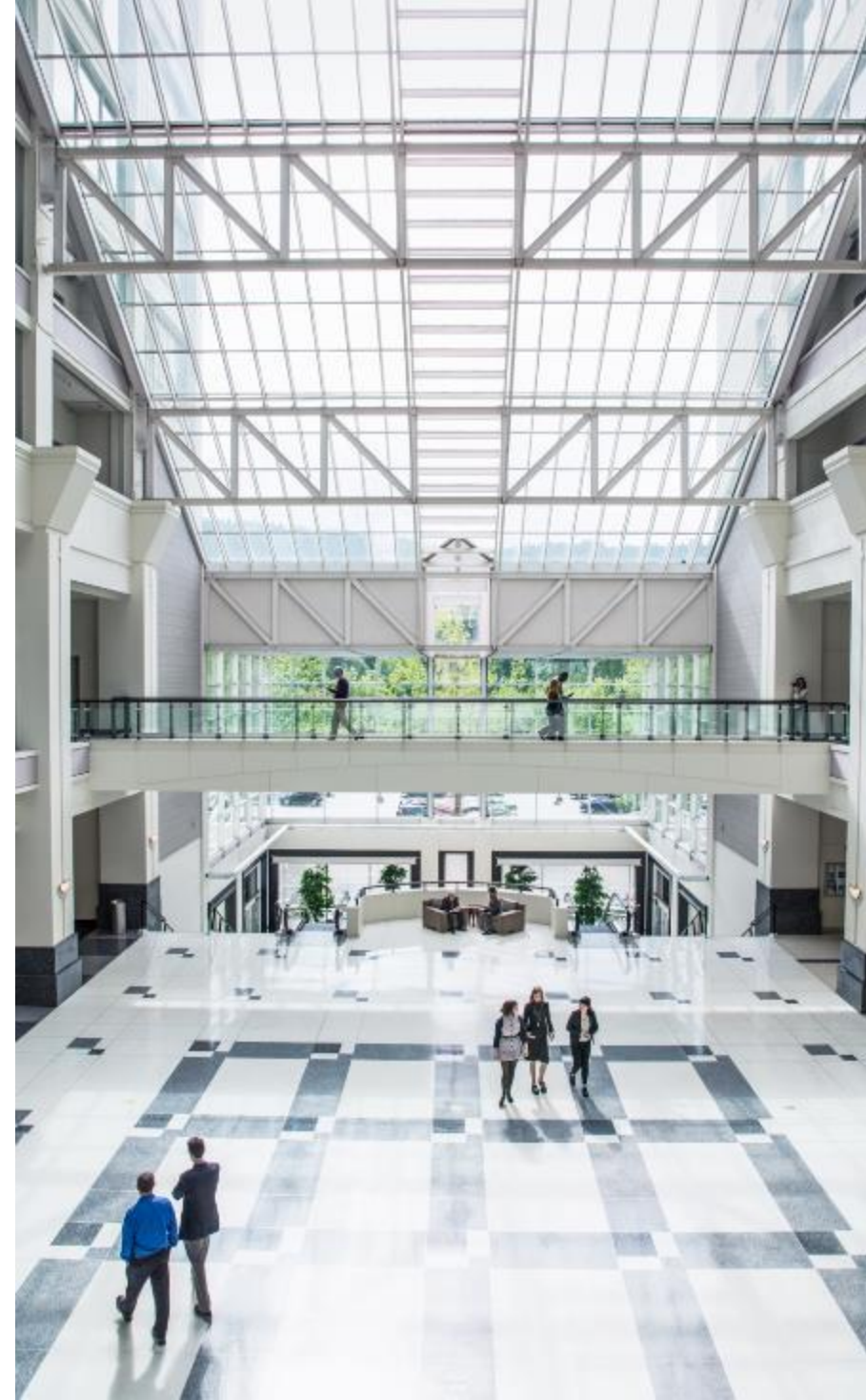
Set up the system in just a few minutes, and the solution can auto-discover and connect to elevators, lighting systems, power systems, HVAC and comfort systems, alarms and security systems, access controls, and more.

Adopt proven technology

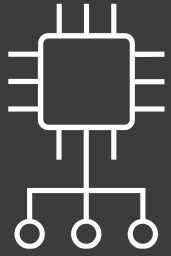
Machine learning models are continually informed by Honeywell technologies used in millions of buildings worldwide.

Secure your platform

Protect business assets while reducing costs and complexity with Azure's enterprise-grade security controls—built-in from the ground up.



Collect



Visualize analytics,
performance metrics, and
pre-fault alerts.

Gain KPI visibility

Aggregate standardized data from systems in one or many buildings to gain a universal, 360-degree "truth" about equipment performance and maintenance processes.

Identify performance anomalies

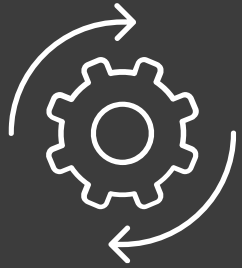
Use advanced analytics to identify performance anomalies or critical equipment issues faster than through a scheduled maintenance approach.

Facilitate outcome-based service

Receive algorithm-based recommendations to fix the root cause of detected faults, automatically creating service cases, and dispatching them to service personnel in the field.



Optimize



Realize ROI quickly
by transforming your
maintenance
processes.

Save money

Transform your maintenance model to reduce maintenance and energy costs, improve equipment performance, extend equipment lifecycles, and enable business continuity.

Empower people

Employ the powerful tools vendors, technicians, building managers, and occupants need to work more efficiently and productively.

Employ a solution that scales

Evolve and build on the cloud-based solution as your needs change or your buildings or portfolios grow.



Powered by Azure IoT Hub

Experience the simplicity of a scalable SaaS solution



Straightforward
deployment



Connect devices
at any scale



Consolidate data and
visualize insights




Best-in-class security
and enterprise-grade
services



Full integration into
business systems

Transformation yields real results for hotel



Forge Digitized Maintenance provided **Crown Towers Perth** with an end to end solution with domain knowledge and site experience combined with hardware and software solutions. The system collects data from all enabled sensors and evolves to ensure the best practices are applied to their site.

One year after deployment at Crown Towers Perth, they are already seeing the impact with reduced energy consumption, increased comfort and a decrease in reactive maintenance.

Electricity savings

451,000 kWh (9%) reduction in electricity

Increasing savings as the year progressed

Continuous tuning process in action

More comfort

3% increase in comfort performance

Sustained comfort improvements

Comfort increasing even though energy use is diminishing

Less complaints

Over 90% decrease in HVAC reactive work orders

OBS is proactively finding and solving issues before they turn into complaints

Only possible with an end to end solution that actions insights as soon as they are identified

Next steps

- Find out how easy it is to adopt Honeywell Forge Digitized Maintenance
connectedbuildingforge@honeywell.com
- Learn more about
[Honeywell Forge Digitized Maintenance](#)
- Learn more about Azure IoT Hub at
azure.microsoft.com





Proactive Maint. / Impact Analysis for Assets

Honeywell Forge Digitized Maintenance Reference Architecture

