Honeywell Forge Digitized Maintenance
Transforming the equipment maintenance model
1. Costs and causes of unplanned downtime
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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 “How Much is Equipment Downtime Costing Your Workplace?” iOffice.
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
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

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

Sensors / Connections
This solution helps operations teams optimize asset performance and equipment response to create cost savings and efficient spaces.

Edge Intelligence
Custom logic analyzes thousands of data points and tags the most important info and control signals needed to support a digital twin.

Cloud Services
Microsoft’s Azure cloud offers a scalable, secure, resilient platform for your system data and for our solution components.

Cloud Intelligence
Cloud modules integrate and analyze telemetry, determine service needs, and calculate the impact of issues to help prioritize service response.

Mgmt. Experience
Your team uses our web-based app to review assets, issues, and impact reports to drive improvements in operations and asset management.

**HVAC**
**SECURITY / FIRE SYSTEMS**
**LIGHTING SYSTEM**
**LIFTS AND ELEVATORS**
**EMPLOYEES AND VISITORS**

**Partner component**
**Azure service**
**Customer component**

**OPERATIONS MANAGER**
**FACILITIES MANAGER**
**MAINTENANCE ENGINEER**
**WORKPLACE EXPERIENCE MGR**
**BUSINESS PERF ANALYST**