kainos®

USE MACHINE LEARNING TO REDUCE MAINTENANCE COSTS BY 50%

Predictive maintenance within the UK has seen a 5X increase in implementation as the 4th Industrial revolution has taken hold.[1] The digitisation benefits promised by the 4th Industrial revolution have accelerated during the Covid-19 era with forward thinking businesses harnessing production and operational cost advantages from modern ML-based predictive maintenance.
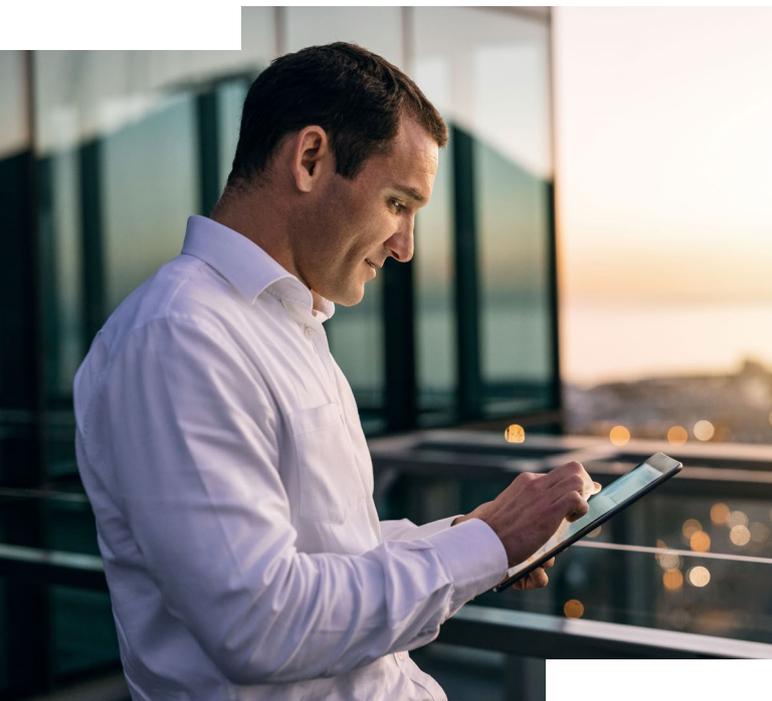
WHAT IS PREDICTIVE MAINTENANCE?

Predictive maintenance uses machine learning to help determine the condition of in-service equipment in order to accurately predict when maintenance should be performed, around the production schedule. Using predictive maintenance to monitor your equipment and other assets can help determine condition and detect anomalies and possible defects to be fixed before failure occurs.

Predictive maintenance is less costly than preventative maintenance, which is scheduled automatically, irrespective of actual condition. In addition, it's considerably more cost effective than reactive maintenance which is the most expensive maintenance option, is post factum and is considered the least safe option.

FACT

Predictive maintenance in the manufacturing plants sector was linked to a 50% reduction in maintenance costs and a 55% reduction in unexpected failures.[3]

HOW CAN PREDICTIVE MAINTENANCE HELP MY COMPANY?

Predictive maintenance can improve productivity, product quality and supports overall effectiveness of assets and environments. Leveraging data often collected by sensors, historical maintenance or repairs data, predictive maintenance can:

- Predict system failures
- Monitor the ageing of equipment for timely replacement
- Guide human actions to prevent human error (e.g. When a component breaks in machinery, sometimes there are multiple potential reasons, save time and money on changing the right component first time and getting to the root of a problem faster)
- Help to minimise damages and costs
- React rapidly when disruption cannot be prevented
- Prevent downtimes and failures more efficiently

PREVENTATIVE VS PREDICTIVE MAINTENANCE

Preventative maintenance is a common approach in the transportation sector as companies' components are highly regulated for safety reasons. This approach can be risky, a source of unnecessary cost, and sub-efficient.

Example: If a key component of the train such as the brakes has a shorter lifespan than the scheduled maintenance checks this could cause negative consequences such as train cancellations, delays, or in the worst-case scenario, an accident. On the other hand, if the checks were too frequent, this is inefficient and often causes unnecessary maintenance downtime causing further cancellations and delays. The use of predictive maintenance uses a data-driven approach to ensure effective maintenance schedules are used when needed.

KEY BENEFITS OF PREDICTIVE MAINTENANCE

Better management of, and increased life expectancy of assets – in some cases by **20-40%**.[2]

Minimises cost of maintenance staff, spare parts and equipment.

Improved safety through the workplace for technicians and operators.

START PREDICTING YOUR COMPANY'S MAINTENANCE

Discover how predictive maintenance can save your business time and money.
Our Data & AI practice develop solutions suitable for all sectors and tailored to client's requirements.

Greg Richards
Data & Artificial Intelligence Business Development Manager, Commercial ✉ in

Gary Hunter
Data & Artificial Intelligence Business Development Director, Commercial ✉ in

References

[1] Predictive Maintenance Market Report 2021-2026, 2021, IoT Analytics

[2] https://www.mckinsey.com/business-functions/operations/our-insights/manufacturing-analytics-unleashes-productivity-and-profitability

[3] Plant Engineer's Hanbook, 2001, edited by R. Keith Mobley