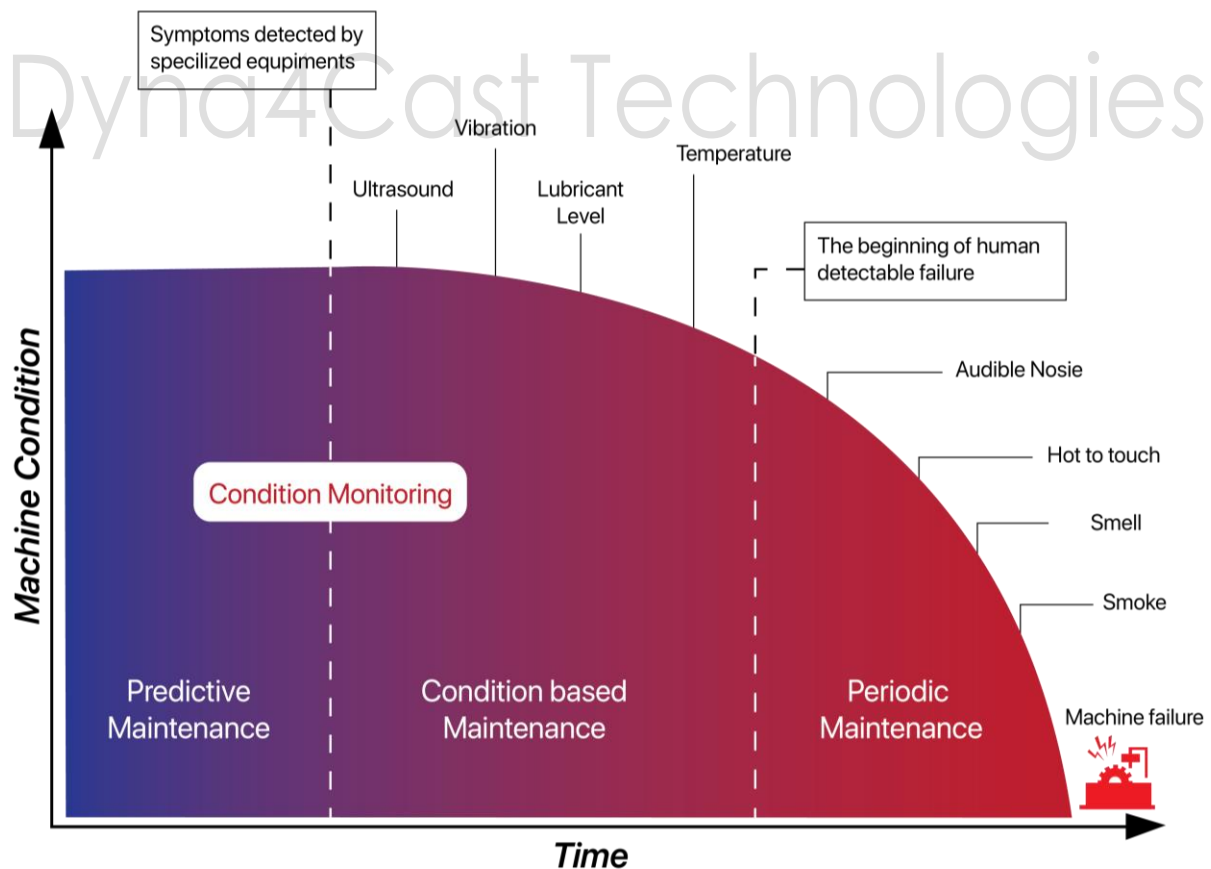


Predictive Maintenance

Predictive maintenance uses condition-monitoring technologies and methods to track the efficiency of assets while they perform. The asset being monitored can be serviced or replaced just before it fails by analysing the historical and real-time data and enables the engineer to predict the future failure of the asset. Predictive maintenance minimises equipment downtime and maintenance expenses while enabling significantly lower maintenance frequency and avoids unplanned maintenance which will affect productivity. The lifespan of the object being monitored may be maximised with the help of predictive maintenance.

Difference b/w Condition monitoring and Predictive maintenance:



In the figure above, you can see the many areas that the maintenance techniques share as well as how far in advance the breakdown is predicted when using predictive maintenance.

Condition-Based Monitoring	Predictive Maintenance
Alert only when KPI are decreased	Alert when asset failure can occur
Human defined rules	Data defined rules
Shows real-time information And let user know if any problem arises	It focuses on early detection of problems in advance
It utilizes sensors for real time data	It utilizes historical and real time data and searches for patterns.
Can lead to excessive maintenance	Just in time maintenance
Preventive approach	Predictive approach

Let us get back to predictive maintenance again...

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So, how does Predictive maintenance work?

Condition-monitoring tools are used by predictive maintenance to assess asset performance. The implemented sensors capture a wide range of information from the physical operations of an asset, such as temperature, vibration, acoustics, conductivity, etc. The Internet of Things (IoT), which enables many systems to collaborate in order to process & analyse the collected data to determine when maintenance should be carried out, and it remains the crucial component of the process. Additionally, when new machine learning technology develops, the prediction algorithms' accuracy might rise, producing even higher performance.

Benefits:

- ✚ Elimination of unscheduled equipment downtime and sudden system failure.
- ✚ Increased production capacity.
- ✚ Reduced maintenance cost
- ✚ Increased equipment lifespan.
- ✚ Increased ROI.
- ✚ Verification of Repairs efficacy.

References

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