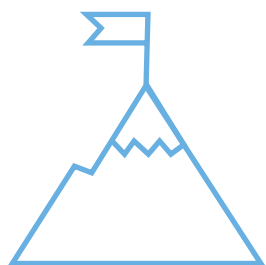




## Case study

# Predicting component failure for shop floor equipment using an Industry 4.0 solution

The client is a US-based multinational corporation that develops medical devices, pharmaceuticals, and consumer packaged goods.



## Business Challenges

### The challenges faced during autoclave operations included:

- ❑ Inconsistent performance patterns, variance in autoclave cycle time, and a failure of autoclave subcomponents, particularly vacuum pumps.
- ❑ Limited visibility into asset performance with zero visibility into operating parameters.
- ❑ Unscheduled downtimes due to an increase in equipment breakdown that led to low asset utilization and lower technician productivity.

## LTIMindtree Solutions

Implemented a predictive maintenance model that used operational and health data from assets to help operationalize maintenance schedules.

Integrated with SAP and historian for process data trends that enabled visibility into maintenance schedules and inventory.

Developed and implemented an application suite to cleanse and analyze using various filters that helped enhance data quality, enriching it with asset parameters and time context.

Created real-time alerts by processing past events and signals connected to the failure of a component.

Provided actionable insights to maintenance engineers using handheld mobile devices that enabled them to take proactive corrective action.

## Business Benefits

**12%  
reduction**

in downtime with  
better visibility of  
asset parameters.

**8%  
improvement**

in Overall Equipment  
Effectiveness (OEE) with  
better asset utilization.

**Improved  
productivity**

with a reduction  
in unscheduled  
maintenance.

**Enabled  
consistent**

performance patterns  
through uniform cycle  
time and reduced risk  
of subcomponent  
failure.

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