



Predictive Maintenance: Don't Wonder "What Might Have Been?"

From reactive maintenance to predictive maintenance.

Maintenance used to be mostly about repairs. The previous approach companies took was to wait for a problem to show up - a burst pipe, an engine failure, a broken part - then fix it. This isn't cheap, as it results in hours, days, weeks of unplanned downtime.

\$2.2 trillion

With engineers telling us we need to spend 2.2 trillion dollars in 5 years just to bring US infrastructure up to date, which is no longer workable.

Innovators are now saving millions by using predictive analytics to anticipate problems before they occur.

Infrastructure management

Across geographies, there is a gap - between what we will need to fix and what we have the resources to address. Governments, utilities agencies, and businesses will struggle to meet the demands of infrastructure management, which is why a shift is underway in how Chief Operating Officers, Chief Information Officers and their teams view maintenance across industries, from transportation to manufacturing to energy supply.

36% reduction in customer calls through increased preventative maintenance and implementation of automated meter reading.

A Fully Automated Process

A fully automated process analyzes this data in real time. It quickly detects failure patterns and identifies the root cause of the problem. The advanced algorithms contained in the predictive maintenance software can determine the reliability of assets at any point in the future, so that inspections and maintenance can be performed at the optimal and most cost-effective moment.

Cambridge Potholes

When budget constraints made the required maintenance work untenable for the Transportation and Public Works Department of City of Cambridge, Ontario, Michael Hausser and his colleagues had to start thinking creatively about maintenance. Instead of fixing potholes after they occur, the city determined how regularly and where a road needs to be inspected to proactively avoid a pothole in the first place. Solutions like this helped the city eliminate over CAN\$71 million in its repair backlog, as they knew exactly when they needed repairs before the damage became too much to handle.

Timely maintenance is critical to preventing failures that may result in costly production interruptions.

Predictive Maintenance Software

Predictive maintenance leverages the rich set of data that manufacturers already have available, such as:

- Maintenance logs



- equipment type
- number of days in operation
- operating voltage
- days from last service
- days to next service
- failure history
- costs for planned and unplanned maintenance
- parts analysis
- other data depending on the machinery involved

Conclusion

Predictive maintenance is showing that companies can save BIG through small, process-oriented changes. Don't believe it?

See for yourself:

- Return on investment: 10 times
- Reduction in maintenance costs: 25-30%
- Reduction in downtime: 35-45%
- Elimination of breakdowns: 70-75%
- Increase in production: 20-25%

Test Strips

These same predictive principles can be applied to something much more personal. A leading maker of blood glucose monitoring systems for people with diabetes sends out over 4 billion test strips a year. These test strips are used only once, but they play a crucial role in providing accurate results. That's where the company began using predictive maintenance to quickly identify and fix potential problems in its manufacturing process - giving its customers the best product possible. Changing the way it has always done things helped the company increase the number of test strips passing release testing from 92% to 97%.

IBM'S Predictive Analytics

On a smarter planet, leaders have learned they need to fix systems, equipment and infrastructure before they fail. The solutions IBM has help offset these challenges from a pure technology standpoint. This would focus on products like SPSS Modeler, SPSS Decision Management, InfoSphere Streams, etc. With IBM's predictive analytics, businesses are able to spend less time and resources recovering, focusing their attention instead on predicting and making better decisions. Because regret, as they say, is expensive.



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