



How to Optimize Service with Predictive Maintenance

Overall, predictive maintenance has led to a tenfold increase in ROI, a 25-30% reduction in maintenance costs, a 70-75% decrease in breakdowns and a 35-45% reduction in downtime.

Predictive maintenance is a proactive maintenance strategy that uses real-time condition monitoring tools to detect performance issues. Based on this data, an organization can estimate when a piece of equipment might fail, enabling it to perform the required maintenance prior to an incident occurring.

The goal of predictive maintenance is to optimize an organization's use of maintenance resources. When implemented correctly, it can significantly increase asset uptime and lower maintenance costs.

What is Predictive Maintenance?

Asset upkeep and maintenance have historically been viewed as labor-intensive and time-consuming work. These time-based, scheduled endeavors were highly inefficient and costly as they required technicians and service providers to physically drive to the location of the assets and check them manually.

It likely doesn't come as a surprise that this led to significant inadequacies in the process, especially with parts management inventory. In fact, many large enterprises with high-value assets, in particular, kept parts inventory and maintenance staff on-site which is a high-cost proposition.

Although these operations strained the system, they ultimately led to today's proliferation of the Internet of Things (IoT).

The IoT can fundamentally change the dynamics of field service and maintenance. Not to mention, with assets providing real-time condition data, organizations can adopt a proactive maintenance strategy that optimizes the use of their services organization.

So, what is predictive maintenance?

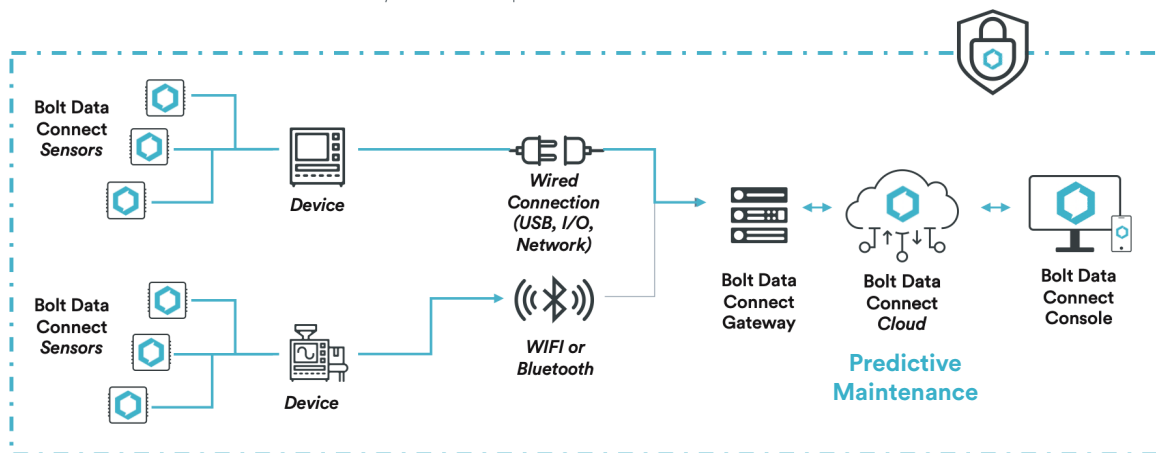
Predictive maintenance is a maintenance strategy that uses the IoT data from assets to detect anomalies in asset operations so issues can be resolved and failure avoided.



How Does Predictive Maintenance Work?

There are three key components of a predictive maintenance strategy. They are:

1. Installed **sensors** that send real-time performance data
2. **IoT infrastructure** that enables the communication between machines, software solutions, and cloud technology to collect and analyze the large amounts of data
3. A **predictive algorithm** that processes data and provides recommendations on a maintenance schedule



In the above graphic, the installed sensors provide real-time data on the asset. The data then travels over the IoT infrastructure to a data lake, typically in the cloud where it's analyzed for anomalies based on predetermined conditions. Once sufficient data is collected, the predictive algorithm schedules service resources as needed.





How to Effectively Use the Predictive Algorithm

The most important component of predictive maintenance is building accurate predictive algorithms. The model you build must consider all the variables (i.e. sensor data), how they interact with each other, and how they impact asset performance.

The goal of the predictive algorithm is to predict machine failures.

When building a predictive model remember it's an iterative process that requires a significant amount of time and data. That's why the more data you collect, the higher the accuracy of the predictive model will be. It's important to note, the data you need is the installed sensor data at the time of failure.

The Importance of Installed Sensors for Building Predictive Algorithms

The initial predictive models are based on asset history or personal observations, manufacturer specifications, etc. In some cases, there might even be a need to build up a wealth of historical data as a baseline and then create the initial predictive models.

Over time, the installed sensors will generate more data which can be used to improve the initial models and make near-perfect failure predictions.

The algorithms should follow a set of predetermined rules that compare the asset's current behavior against its expected behavior. Deviations are an indication of potential failure.

The algorithm then predicts failure points based on deviations, current operating conditions, past failure data, and other variables that are built into the data model.

The end result is an automated system that:

- Monitors operating conditions
- Understands and predicts patterns created by data anomalies
- Creates alerts when there's a deviation from established thresholds



Benefits of Predictive Maintenance

Predictive maintenance can help lower costs and improve asset performance in several ways. Below are the most common benefits:

Benefit 1: Lowers time and cost of maintenance

Since predictive maintenance is intended to anticipate potential failure before it occurs, companies can plan and schedule future visits. For example, service dispatchers can assign and dispatch a technician who's near the asset or alert the customer of potential issues and if possible, help fix or take the asset offline.

Benefit 2: Reduces failures and increases uptime

Since assets are maintained in real-time, the probability of unexpected asset failure can decline significantly. As a result, companies can enjoy an increase in uptime.

Benefit 3: Minimizes the cost of maintaining spare parts and supplies

Companies are empowered with the knowledge of what parts and supplies they'll need to handle a situation if a problem occurs. Maintaining this inventory becomes just in time. Parts can be ordered as the need arises, which decreases inventory levels overall and reduces inventory costs..

Benefit 4: Improves return on investment (ROI)

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↓ **25-30%**
**MAINTENANCE
COSTS**

↓ **70-75%**
BREAKDOWNS

↓ **35-45%**
DOWNTIME

Bolt Data Connect & Predictive Maintenance

Our team at Bolt Data helps organizations connect, monitor, and act on real-time data from assets in the field to implement predictive maintenance.

That's why we created Bolt Data Connect from the field service professionals' perspective to help automate practices, such as preventive maintenance. This out-of-the-box solution integrates with the Salesforce platform through native connectivity to Salesforce Field Service and ServiceMax Field Service applications.

Bolt Data Connect will give your data the power to speak and in this case, automate work schedules, order parts, and perform other important service processes.



The Top Benefits of Bolt Data Connect

1. Uses a predictive algorithm to detect anomalies in asset operations so issues can be resolved and failure avoided.
2. Optimize usage of maintenance resources while predicting machine failures
3. Significantly increase asset uptime and decrease maintenance costs, asset breakdowns, and asset downtime
4. Preserves current IT and asset investments and extends capabilities rather than rip and replace
5. Implements a complete solution within weeks and easily scales at your pace

To learn more and see a demo of Bolt Data Connect and how it can help your efforts, contact us at hello@bolt-data.com