The power of predictive maintenance

Clockwork’s Lifecycle Analytics Platform creates a Predictive Twin of your fleet as a bottom-up, reliability-based statistical model of each asset and all its relevant parts. In addition to providing a holistic view on the current health of the fleet, it is also the basis for high-fidelity parts and maintenance demands forecasting. Using an advanced analytics engine, Clockwork can simulate asset operations into the future while taking into consideration any changes in the asset’s operating environment. The result is a detailed, verifiable, accurate multi-year forecast that can dramatically reduce expenditures while maximizing fleet availability. The Predictive Twin model can also provide insights that help organizations identify and address problems before they occur by optimizing the maintenance and supply infrastructure.

Powerful “What-if” scenario editors allow for the simulation of alternative forecasts based on user-defined changes to any aspect of the predictive model. By creating multiple alternate scenarios, asset managers can compare and contrast different strategic approaches that maximize availability while controlling spend and minimizing risks.

The limitations of traditional forecasting

While all fleet operators have maintenance forecasting systems to try and anticipate parts and maintenance needs, developing an accurate forecast remains elusive for most. This is because traditional forecasting methods only take historical trends into account, overlooking other key variables that will affect asset lifecycle or performance. For a truly accurate and verifiable forecast, fleet operators need to adopt a Predictive Maintenance approach to forecasting.
Based on decades of experience solving complex real-world problems for Maintenance, Operations, and Supply Chain professionals, Clockwork’s Lifecycle Analytics Platform provides the most complete and reliable solutions to optimize the maintenance of your strategic assets. Our approach to Predictive Maintenance uses a detailed reliability-based model of your assets to provide a high-fidelity accurate parts and maintenance demands forecast, as well as the ability to optimize your entire maintenance infrastructure based on anticipated future operating scenarios.

**Demand Matrix**

Stunningly accurate spare parts and maintenance forecasts using a Predictive Twin of your assets - down to the component. The result is an approach to forecasting that provides detailed, verifiable, accurate, spares and maintenance demands for each asset, part and relevant sub-component in the fleet. With Demand Matrix, organizations accurately plan upcoming maintenance for multiple years in the future and proactively identify problems before they occur.

**Plan Matrix**

Plan Matrix builds on the Predictive Twin model to incorporate the entire asset maintenance and support infrastructure as part of the forecast. This means you quickly spot availability issues due to inventory placement, parts failures, repair delays, and other events long before they happen. “What if” scenario editors allow for the simulation of alternate forecasts, based on user-defined changes to any aspect of the predictive model. By creating multiple alternate scenarios, you can compare and contrast different strategic approaches that maximize availability while controlling spend and understanding risks.

**Studio**

More than a way to import data from back-office systems, Studio handles complex integrations and work flows across multiple data sources to help clean and harmonize your data to create and refresh the Predictive Twin model. Studio can also be used to update back-end systems with Demand Matrix and Plan Matrix outputs.

Clockwork Advanced Analytics Platform

- **Discrete Event Simulation**
  - Simulation engine
  - Asset Models
  - Metric Aggregation

- **Interactive Scenario Editors**
  - “What if” tools
  - Optimization

- **Extensive Reporting**
  - Problem identification
  - Predictive metrics

- **Data Management**
  - Database access
  - Flat file
  - Streaming data

- **Advanced Analytics Libraries**
  - Machine learning
  - Neural networks
  - NLP and more

- **System Integration**
  - Integration APIs
  - Automated model building

For more information, email us at info@clockwork-solutions or visit us at clockwork-solutions.com