# Machine 360
## An IIoT Solution

**Data Drives Manufacturing 4.0**

## Key Benefits

- Reduces downtime events to boost productivity and avoid commercial or regulatory fines

- Allows sharing with partners for joint mitigation planning and improved efficiencies

- Reduces HSE-relevant (health, safety and environmental) events

- Optimizes operational plans to boost yield and reduce waste

- Test manufacturing quality assurance procedures quickly and with less effort

- Reduction of energy consumption

Sensor data has been a staple in the manufacturing and industrial space for decades. Typically, quality and process engineers set up sophisticated studies to improve production and testing processes to boost throughput, yield and quality. Today, IT and Operations executives are looking to enable Manufacturing 4.0 across the enterprise by parting with this traditional approach confined to a specific piece of equipment, production line, team, study or plant. The introduction of a more scalable approach enabling reuse, self-service dominates the discussion of the Industrial-Internet-of-Things (IIoT) paradigm. Citizen integrators and analysts need to be enabled to setup and integrate increasingly more complex data sources, including sensor arrays. They are not looking to reinvent the wheel every single time but leverage data sets and insights with a high degree of fidelity from past studies.

Machine 360 utilizes Informatica Edge Data Streaming and Informatica Big Data Streaming for real-time equipment performance monitoring and downstream analytics based on sensor data. Rather than waiting weeks for Programmable Logic Controllers (PLCs) to be reprogrammed, quick Proof-of-Concepts using commoditized sensors can be achieved for ad-hoc monitoring to determine telemetry impacts from environmental changes such as light, moisture, temperature, and wind speed among others. Once more information has been collected, process changes can be identified providing solid operational solutions based on factual data to issues at hand.

To enable the analysis of larger data sets, audits can be setup very quickly to begin collecting and feeding data into downstream analytical applications. This allows collection outside of your current IIoT system landscape to shorten time-to-insight, yet it can be easily integrated into legacy data flows if needed and warranted. The combination of your existing plant systems and easy access to new sensors to prove or identify challenges gives you a fast and flexible means to better understand equipment, manufacturing input and environmental conditions.

Machine 360 augments existing SCADA & Data Historian server infrastructure by increasing productivity using its quick-start solution and easy to use configuration/approach. Value is further multiplied by the ability to link Machine 360 with Informatica's Big Data Management, Big Data Quality and Enterprise Data Lake (EDL) products enabling companies to mitigate data quality and data wrangling problems (outliers, gaps) across a heterogenous sensor vendor landscape for further batch analysis in Hadoop no matter what the ever-changing integration technology or pattern of choice is. This allows companies to insulate themselves financially from an increasingly fragmented and everchanging Big Data component landscape.

### Enterprise Wide Self Service IIoT with Confidence

Gartner has named Informatica a leader in all their markets (Data Quality, Master Data Management, iPaaS, Metadata Management, Data Integration). Machine 360 now brings this trusted and hardened software to the shop floor and anywhere else that sensors are collecting data. Edge Data Streaming unlocks access to SCADA systems that can now be integrated with industry leading integration software tools from Informatica. This IIoT solution collects measurements and brings data to dashboards in real-time and in batch allowing issues or opportunities to be addressed as they happen. Data can be segmented and routed throughout the organization, from shop floor to customer service to get the right data to the appropriate people/roles or downstream systems.

You now have the capability to build your own centralized, high-fidelity repository of sensor data. No longer building plant and vendor solution-based silos. Centralizing data will allow you to build a view of all of your systems and data enabling you to improve equipment and sensor spend (CAPEX) as well as labor software subscription and maintenance spend (OPEX) planning throughout your operations. Choosing best of breed vs ONE manufacturer is no longer required as you can consolidate the data that fits your needs - ultimate flexibility.

Whether you have plants, project sites or a fleet of trucks, Machine 360 can provide an encompassing comprehensive approach to sensor data automation that can yield sustainable competitiveness in the new era of digital manufacturing.

### Customer Use Cases

#### Plant Waste Reduction

A recent Informatica customer voiced concern over an unexpectedly high scrap rate for several new metal mold castings. After introducing more sensors in a controlled setting, extracting the logs into Excel and later into a Data Historian (after working with the application team for a few weeks), they could reduce the scrap rate by 16% introducing a new wipe-down procedure on a hot and cold mold. This result could have been accelerated with a more real-time approach, involving fewer hands and intuitive, easier-to-use, powerful analysis tools. However, to date, other plants are unable to leverage the findings and underlying data making this success a singular one.

#### Increase Revenue Through Performance Improvements

Another Informatica client created a new revenue stream by sharing its aircraft turbine data with multiple engineering teams to assess performance at various operational altitudes, loads, geolocation, weather conditions and pollution levels. This not only allowed the R&D group to improve performance by working with suppliers to adjust material compositions but also boosting profits for said customer by monetizing resulting real-time analytics. Now, aircraft operators were able to adjust flight plans before and during flight, conserving fuel and extending the engine's time-on-wing by reducing ad hoc maintenance.

## Machine 360 Data Architecture