

# Oracle Industrial Manufacturing Industry 4.0

Industry 4.0 means a world where everything is connected to everything, and advanced analytics/artificial intelligence creates autonomous manufacturing capability. From a world of sequential, siloed transactional recording of “what happened”, to a world where data is real-time and your enterprise systems tell you “what will happen”. New technology is creating value chain innovations, and forcing market disruptions. Globalization of markets, new manufacturing technologies, IoT, AI, and cloud computing enable this next industrial revolution and Oracle’s cloud solutions have these tools ready-built. Industry 4.0 is driving four transformational domains: product innovation, customer and field service, the smart factory, and value-chain visibility.

## Connected Innovation

For industrial manufacturers, mastering data and the product life cycle is becoming every bit as important as the physical product produced. Tremendous business opportunities and improvements are made when the PLM process is enabled with the digital thread and business management is expanded into the customer’s operational domain. The innovative PLM process uses this connected feedback loop from customer usage to improve product quality, assess new product ideas, continually improve product offerings, and shorten product development cycles.

Industry 4.0 extends the PLM cycle both forward into product end of life, and backward into critical customer expectations, product development, and market opportunities. Combining Oracle PLM, CPQ, AI for CX, and the IoT Cloud offerings gives industrial manufacturers the tools required to support digitalization of PLM, consumerization of B2B, and the ability to transform the entire product life cycle.



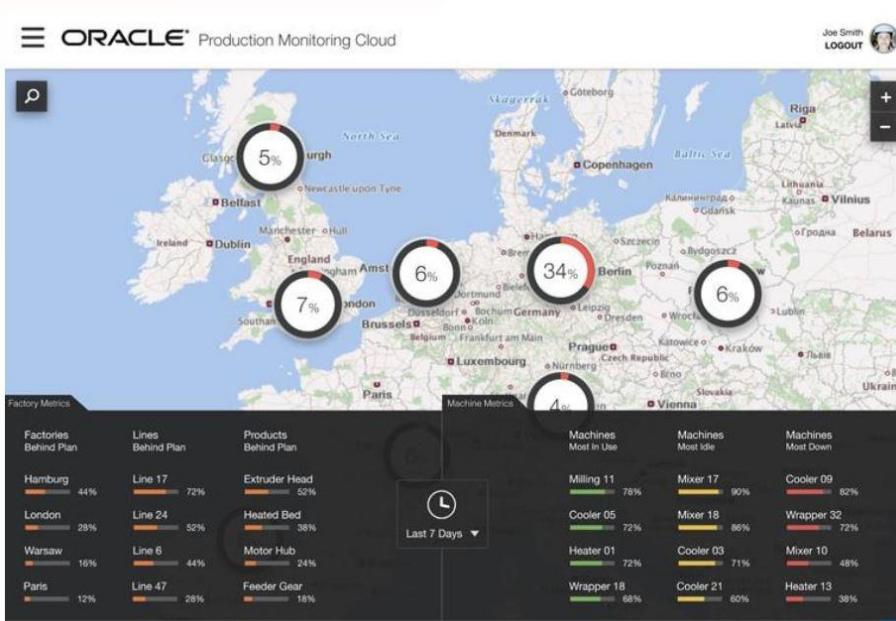
## Key Business Benefits:

- Improve business efficiency through automation and analytical insights
- Agility through digitalization of products and processes
- Product innovation by extending your reach into the value chain and the IoT feedback loop
- Improved customer experience through connectivity
- Cost and quality improvements through reduced manufacturing waste
- Increased revenue by supporting new business models and ability to deliver high mix / customized products

## Connected Factory

Connecting production machines to manufacturing process through the Oracle's Smart Factory solution helps manufacturing companies better predict and resolve maintenance requirements, correlate quality issues to machine and environmental factors, reduce downtime and cost, and improve quality.

IoT Production Monitoring gives manufacturers the ability to manage at the machine level detail and the aggregate level for a plant, region, or world view of operations. Identify and monitor key performance indicators on visual dashboards with the ability to generate alerts and automate action items within your manufacturing management systems.



**"3DSignals uses Production IoT to monitor their customer facilities. Their award-winning, machine learning sound sensors are installed for asset monitoring and predictive maintenance"**

The connected factory generates the data model for advanced production analytics such as machine learning, and predictive maintenance. Asset sensor data on production machines enables real-time monitoring for KPI dashboards and operational alerts. This same data expands a company's capabilities for Big Data analysis.

Oracle's Manufacturing, IoT Monitoring, Quality, Maintenance, and AI for Manufacturing establishes the complete solution set for the Industry 4.0 factory.

## Connected Service

Industry 4.0 field service digitalization is changing the way we service equipment, strategically go-to market, and manage customer relationships. Asset data collection from product sensors provides business opportunities that were impractical a few years ago. Real-time sensor data informs businesses on

what is happening in the field, real-time data analytics informs what will happen, and natural integration into management systems automate responses.

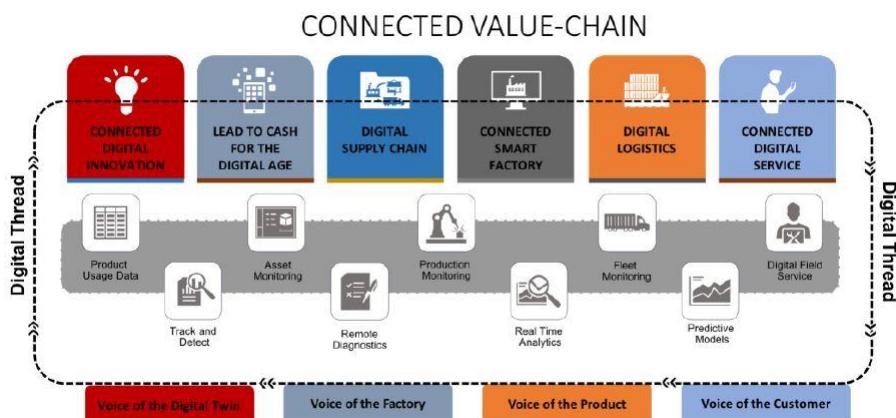
Predictive maintenance and asset health analytics make service a proactive management approach based on usage, environment variables, and key diagnostic values.

Driven by their need for agility and reduction in CAPEX, large and small customers alike are demanding “products as a service” relationships from their suppliers. Industrial manufacturers now must design smart products that can support customer demand, and support the change in the business model that this strategy imposes. Products must communicate usage data and key performance indicators for remote maintenance management that is required for subscription-based billing models.

Oracle’s connected service solution enables this critical market change to a service based economy. PLM, Service Monitoring, IoT, Maintenance, and the Monetization Cloud create the Industry 4.0 framework required to support service management’s elevated importance in this new business model.

## Connected Value Chain

Digitalizing the value chain transforms traditional business transaction processing, supply chain integrations, and spawns new business capabilities. As the number of IIoT devices, RFID chips, and GPS trackers continue to grow, the ability to innovate traditional supply chains is enhanced. The complete value chain is now within reach for innovation and creates tremendous business value for manufacturers, partners, and customers alike.



While Industrial manufacturers are well versed in the value of real-time data acquisition and management action, the historical efforts and successes has largely been confined to the four walls of the factory. Industry 4.0 concepts with

built-in sensors, cloud-based computing, and blockchain technology enables manufacturers to enhance and extend their visibility and control of the value stream. More real-time clarity and detail in the value chain provides opportunities in understanding true lead-times, cost components of materials, material availability, logistic estimates and control, and practically every other aspect of the supply chain.

Digital transformation delivers business intelligence that creates operational efficiency across the extended supply chain. The Oracle Cloud solutions have these tools to support Industry 4.0, reduce costs, and create value for manufacturers and customers. Oracle has the largest footprint in Cloud applications, giving companies the most comprehensive Digital Thread through the value-chain; connecting partners and the customer.

Oracle's Industry 4.0 solutions provides the broadest footprint of ready to deploy technologies in the market, enabling rapid implementations with a class leading cloud provider.

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## Integrated Cloud Applications & Platform Services

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