HCLTech | Supercharging Progress™

Real-time Manufacturing Insights solution (RMI)

Real time operational visibility from shop-floor to top-floor

Overview

Today, most manufacturers have already made the most obvious changes to streamline their operations, using traditional methods to eke as much productivity out of their supply chains and plants as possible. Now, companies must look for new ways to boost the productivity and profitability of their operations.

There's one significant asset that manufacturers have not yet optimized: their own data. Process industries generate enormous volumes of data, but many have failed to make use of this mountain of potential intelligence. With computational power and rapidly advancing analytics opportunities, process manufacturers can put that data to work, gathering information from multiple data sources and taking advantage of machine learning models and visualization platforms to uncover new ways to optimize their processes from the sourcing of raw materials to the sale of their finished products.

Source – Mckinsey and Co. - Manufacturing: Analytics unleashes productivity and profitability

About our solution

HCLTech's Real-time Manufacturing Insights (RMI) solution helps organizations gain visibility into their entire manufacturing setup. It works along with the system present within the plant such as MES, SCADA etc. and provides predictive and prescriptive maintenance capabilities. It is compatible with existing systems and assets and provides seamless integration with various ISA95 stack industry applications and its functional modules, aggregate the Man, Machine, Material & Environment data in a very efficient manner with ability of various protocols and communication methods. It improves production agility, manages cost and ensures production quality. The solution delivers:

- A **top floor to shop floor** integrated view of the entire manufacturing process

- **Action-driven** manufacturing analytics and recommended actions

- **Real-time** operational visibility of Man Machine Material Method Environment (4M&1E)

- Seamless integration with more than **100+ industrial** protocols support
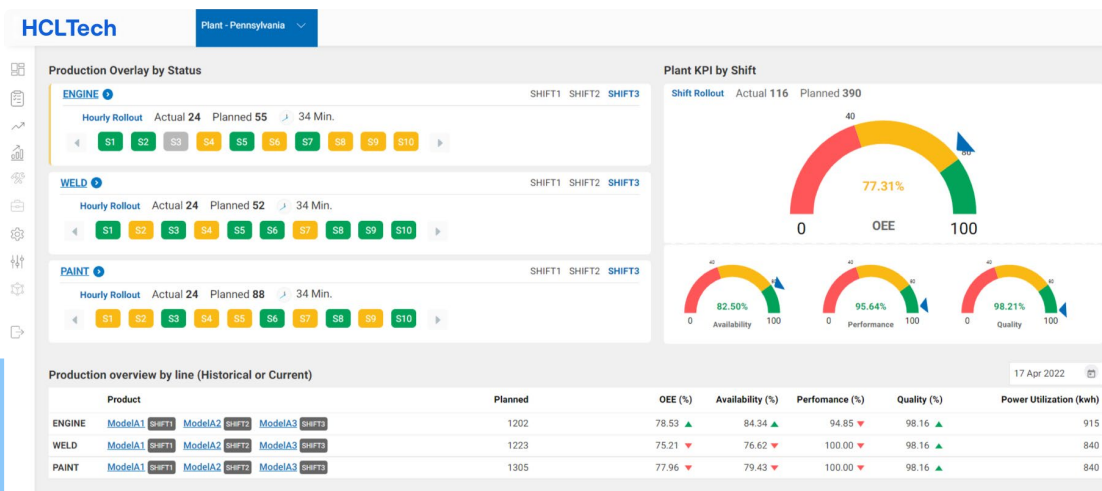
Key features
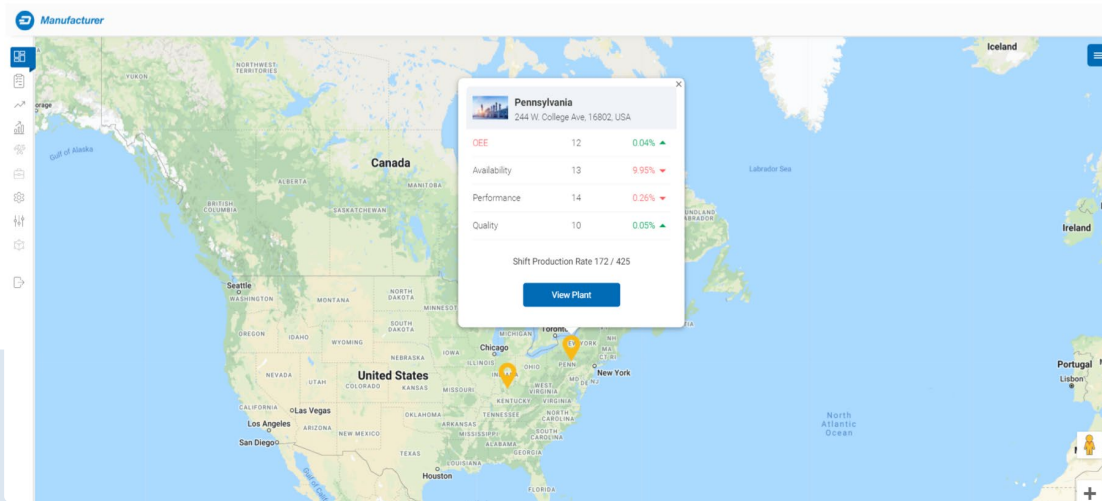
Easy configuration of plant hierarchy

Dynamic visualization of new lines and assets, production target settings

Enterprise view on a single dashboard
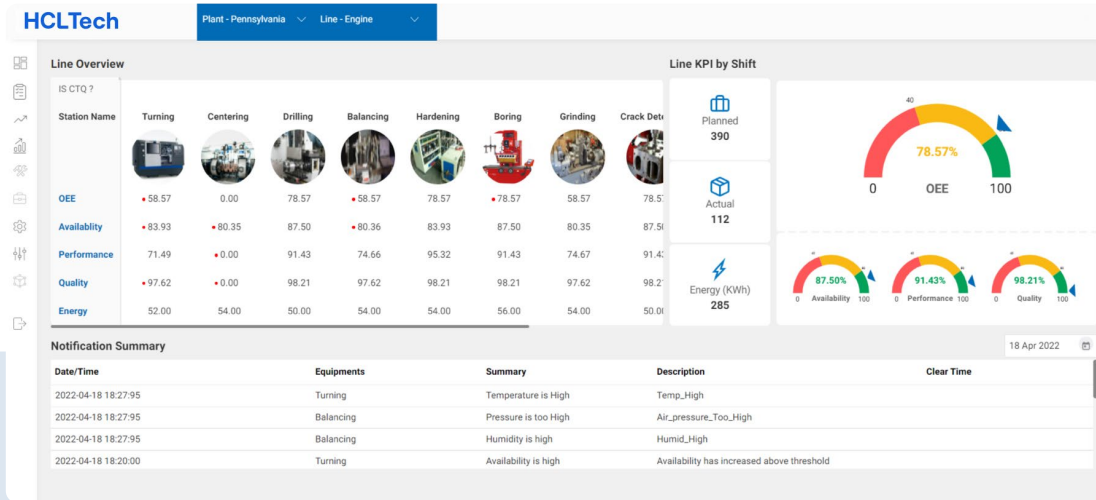
Monitor plant performance, across regions

Shift management

Configure the shifts in manufacturing facility (time, resource, and product configuration, etc.)

User-defined KPI

Monitor the KPIs that you care about apart from just the standard OEE and quality KPIs
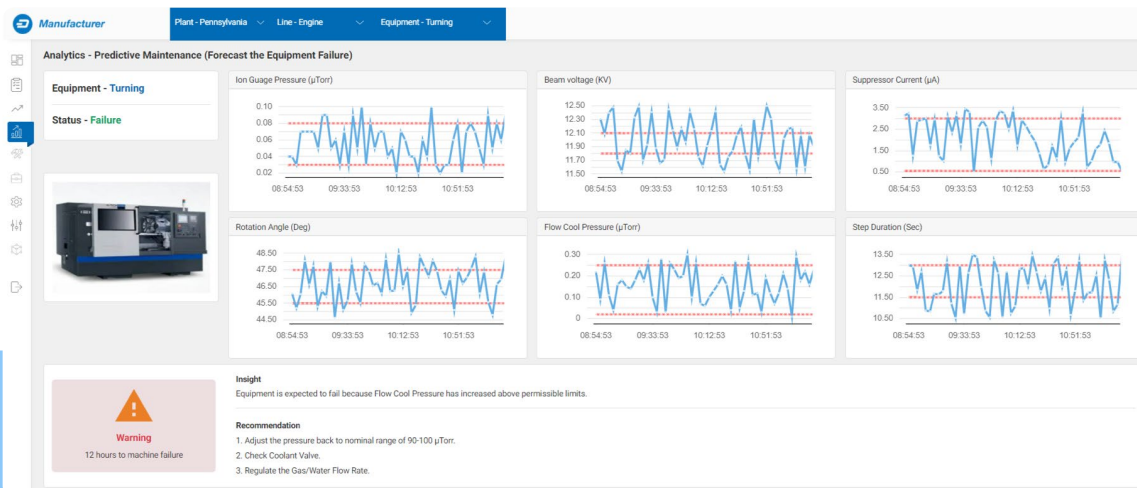
Alert management

Threshold configuration of KPI alerts via email, SMS, application, etc

Reports

Detailed insights that include asset utilization, downtime, scrap losses, and stoppages

Manufacturing analytics insights

Real-time KPI dashboards, asset health monitoring, line analytics, quality analytics and trend analysis
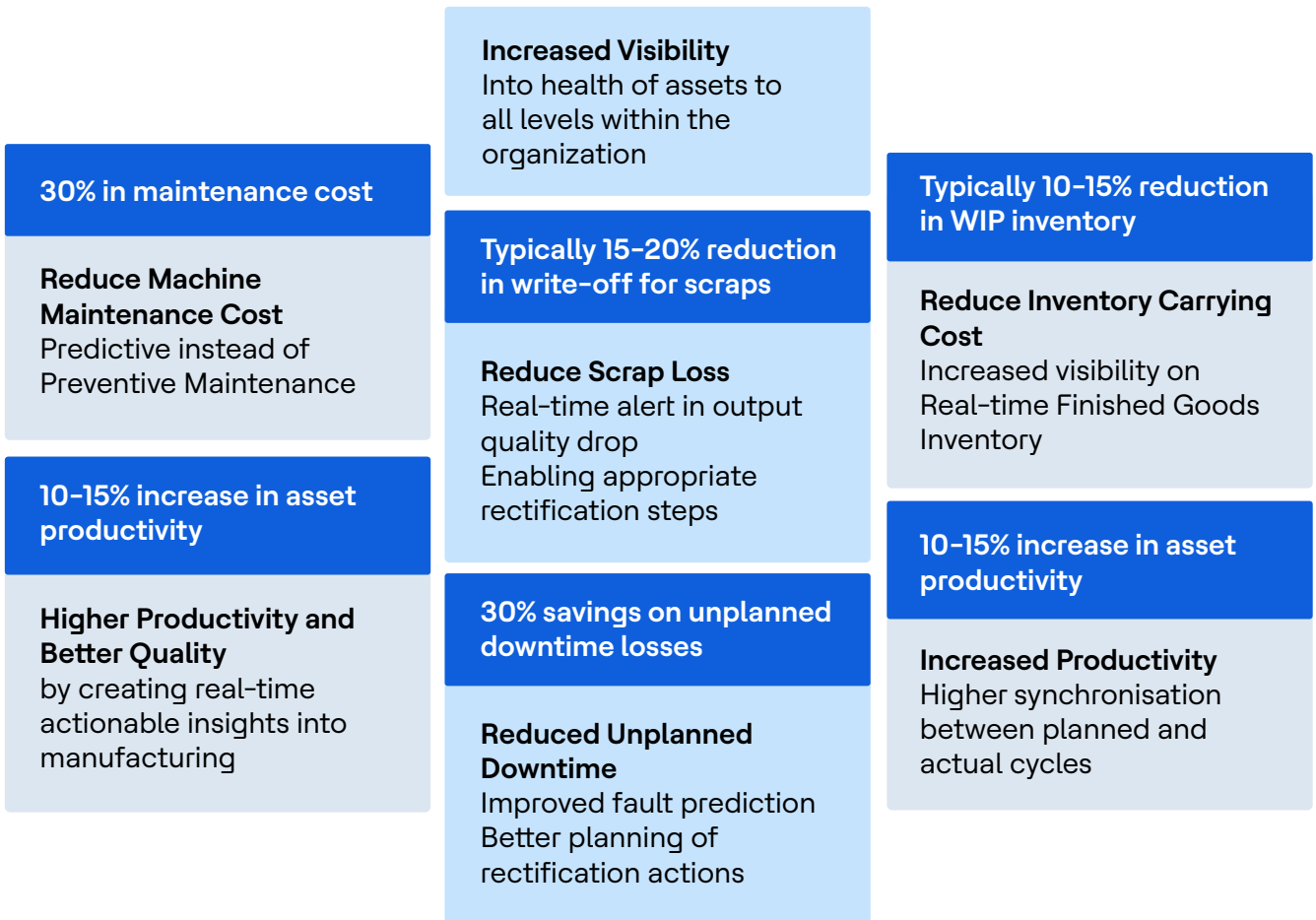
Predictive and prescriptive analytics

Recommended actions - on top of data - to improve manufacturing productivity

Role-based visualization

Real-time visibility of the entire manufacturing operations based on the user's role

Key benefits

Increased Visibility
Into health of assets to all levels within the organization

30% in maintenance cost

Reduce Machine Maintenance Cost
Predictive instead of Preventive Maintenance

Typically 15-20% reduction in write-off for scraps

Reduce Scrap Loss
Real-time alert in output quality drop
Enabling appropriate rectification steps

Typically 10-15% reduction in WIP inventory

Reduce Inventory Carrying Cost
Increased visibility on Real-time Finished Goods Inventory

10-15% increase in asset productivity

Higher Productivity and Better Quality
by creating real-time actionable insights into manufacturing

30% savings on unplanned downtime losses

Reduced Unplanned Downtime
Improved fault prediction
Better planning of rectification actions

10-15% increase in asset productivity

Increased Productivity
Higher synchronisation between planned and actual cycles

Use cases

1 Improving production performance for a leading wood products company

The situation
- Customer had the challenge of meeting production targets (OTIF) and accurate predictability of downtimes that led to production reliability loss and unplanned downtimes.
- The project was crucial to gain better control over meeting targets and reducing fluctuations in demand management.

The solution
- The IoT WoRKS™ team created an RMI-based AI/ML model solution to determine descriptive and quantitative predictive KPIs, which would provide insights into the breakdown of parts on rotating equipment.
- The RMI solution helped to improve the visibility of manufacturing KPI's and improve current asset performance by using data collected through 100+ sensors.
- The AI/ML Models were in continuous learning mode to improve the prediction of the breakdown and increase production efficiency.

The results
- Improved run rate per shift from the current average of 45 MBF / hour to greater than 65 MBF / hour.
- Reduced unplanned downtime for shopfloor operations and better control over production targets and OTIF.
- Improvement in production efficiency from the current average of 75% to >80% of the mill.
- Easy to scale solution to customer's 30+ mills over a long-term journey.

2 Enabling automated data collection and analysis for leading lens manufacturer

The situation
- Customer was in the middle of a digital transformation program. Their existing processes and procedures supporting the design, development, and manufacturing of IOLs were cumbersome, inefficient, and hampered innovation.
- Most of the homegrown systems supporting the processes were nearing end-of-life. The tools lack the necessary capabilities, architecture & automation to support the growing needs of the organization and increased regulatory risks.

The solution
- HCLTech created a dedicated RMI (Real-time manufacturing insights) web instance for the customer to accelerate data collection and analysis.
- Team did the configuration of the plant, assets etc., as part of the discovery phase.
- Future state roadmap & draft cost estimates for scaled deployment were developed.
- Collaboration with the customer stakeholders was done to align on the roadmap and plan subsequent phase.

The results
- Improvement across critical processes in R&D, SC, Manufacturing, Quality, and Regulatory areas.
- Established future state roadmaps, including new systems PLM, MES, Quality Management Systems, and RIMs.
- Identified key gaps and opportunities for improvement using data collected through RMI instances.

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HCLTech is a global technology company, home to 219,000+ people across 54 countries, delivering industry-leading capabilities centered around digital, engineering and cloud, powered by a broad portfolio of technology services and products. We work with clients across all major verticals, providing industry solutions for Financial Services, Manufacturing, Life Sciences and Healthcare, Technology and Services, Telecom and Media, Retail and CPG, and Public Services. Consolidated revenues as of 12 months ending September 2022 totaled $12.1 billion. To learn how we can supercharge progress for you, visit hcltech.com.