

Smart Manufacturing Solutions

for the Factory of the Future



3300 Breckinridge Boulevard, Suite 100, Duluth, GA 30096
Polytron.com/contact-us | (855) 794 - 7659



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Our Approach

We are experts at leveraging Industry 4.0 solutions and best practices to optimize manufacturing systems. We are not tied to specific technologies or vendors, but we evaluate each client's technology stack and gaps in order to recommend solutions that best fit their short and long term needs. We develop and implement Smart Manufacturing strategies, whether for one manufacturing facility or across the entire enterprise, while delivering measurable ROI along the way. Our solutions allow us to start small, prove the value, then rapidly expand.

Challenge

Manufacturers struggle to achieve real-time actionable insights to:

- Drive manufacturing improvement
- Increase line throughput
- Meet customer demand
- Ensure product quality
- Optimize production schedules
- Ensure regulatory compliance
- Manage inventory
- Track product
- Reduce downtime, waste and energy usage

Benefits

Benefits of Smart Manufacturing Solutions:

- Real time, actionable insights
- Quality compliance
- Full product traceability
- Improved uptime
- Schedule adherence
- Paperless journals
- Contextualized information
- Security
- Workflow management
- Alerts
- Historian
- Dashboards
- Scoreboards
- Reports
- Mobility

Solutions

Performance Management | Production Management | Quality Management | Traceability | Visual Workflow | Inventory Management | Predictive Maintenance | Maintenance Management | Silo Monitoring | Energy Management

Performance Management

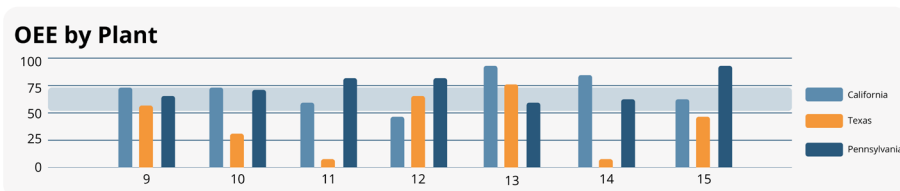
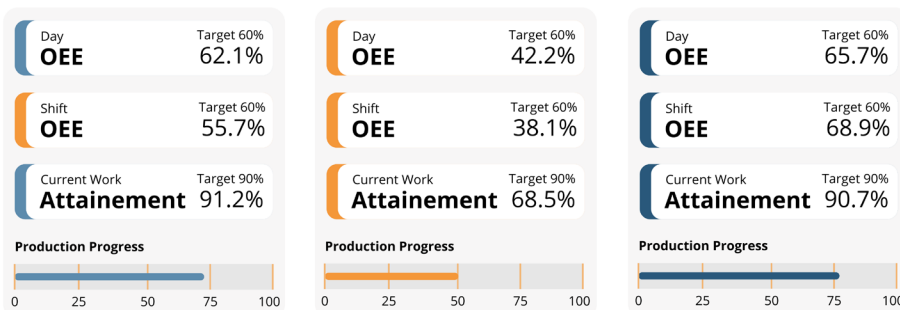
Challenge

What is limiting your factory performance? Built on a Manufacturing Operations Management (MOM) platform, the Performance Management solution framework benchmarks performance and productivity by collecting and aggregating data to deliver real-time, actionable intelligence for significant productivity improvement – while leveraging your existing assets, resources, and infrastructure.

Benefits

Benefits of Performance Management:

- Eliminate Production Bottlenecks
- Increase Throughput
- Maximize Capacity
- Increase On-time Delivery



Solutions

- ▶ Planning & Scheduling Performance
- ▶ Equipment Performance
- ▶ Changeover Performance
- ▶ Maintenance Performance
- ▶ Quality Performance
- ▶ Enterprise Metrics & Reporting
- ▶ MOM Infrastructure Provides:
 - Smart Sensors
 - Multi-Plant Visibility
 - Paperless
 - Scoreboards
 - Security
 - Tasks
 - Alerts
 - Journal
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 - Mobility
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 - Start Small & Expand

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Production Management

Challenge

Manufacturing operations have many inherent complexities: Production Management with a Manufacturing Operations Management (MOM) platform will address complexities so you can plan, schedule, execute, and deliver goods as efficiently and effectively as possible. The MOM platform delivers interoperability to connect your business and manufacturing systems involved in production management.

Benefits

Benefits of Production Management:

- Optimize Planning & Scheduling
- Increase On-Time Delivery
- Improve Productivity
- Improve Profitability

Solutions

- ▶ Assign Job/Process Order
- ▶ Algorithmic Production Scheduling
- ▶ Reinforce Best Practices
- ▶ Track & Manage Events
- ▶ MOM Infrastructure Provides:
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Quality Management

Challenge

High quality made efficient, sustainable, and repeatable:

The availability of real-time, contextualized information using a Manufacturing Operations Management (MOM) platform gives insight into poor quality and provides tools to take quick action on those insights, creating a closed-loop system of product quality management.

Benefits

Benefits of Quality Management:

- Improve Customer Satisfaction
- Reduce Costs of Poor Quality
- Standardize Production Processes
- Improve Regulatory Compliance

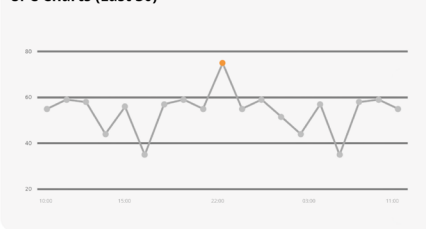
Solutions

- ▶ Real-Time Quality Data Collection
- ▶ Revision & Control Documentation
- ▶ Scrap & Defects Management
- ▶ Real-Time Statistical Process Control (SPC)
- ▶ Historical Trends
- ▶ Customer Complaint Management
- ▶ Corrective Action Management
- ▶ MOM Infrastructure Provides:
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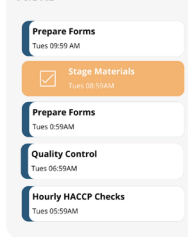
Current Job Quality



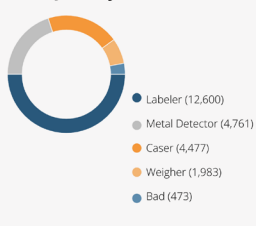
SPC Charts (Last 30)



Tasks



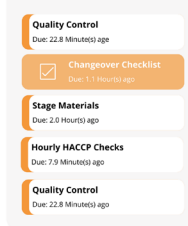
Last 5 Jobs Reject Distribution



Last 5 Jobs Quality

| Job | Product | Good Bottles | Total Bottles | Quality |
|-------|---------|--------------|---------------|---------|
| P4915 | DRIS200 | 24,575.0 | 23,370.0 | 89.8% |
| P4914 | ADRA500 | 14,969.0 | 19,818.0 | 89.0% |
| P4913 | DRIS500 | 8,810.0 | 9,946.0 | 88.6% |
| P4912 | ADRA500 | 15,557.0 | 19,059.0 | 81.6% |
| P4823 | DRIS500 | 7,495.0 | 8,286.0 | 90.5% |

Overdue Tasks



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Traceability

Challenge

Traceability in production is critical to protecting consumers and your brand:

For regulated plants, recording, tracking, and tracing the genealogy of raw materials, Work-in-Process (WIP), and go-to-market products is essential to regulatory compliance. When traceability data is providing real-time transparency, it can help proactively limit the impact of any quality problem before the product is shipped.

Benefits

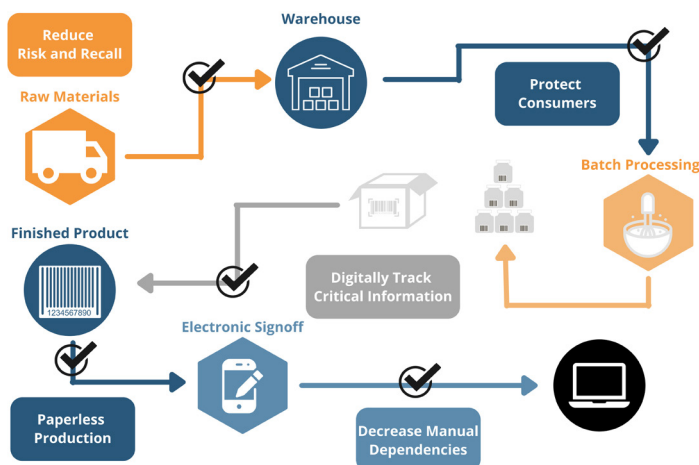
Benefits of Traceability:

- Protect Customer Safety and Brand Reputation
- Comply with Regulatory Requirements
- Improve Inventory Accuracy
- Minimize Recall Time & Cost

Solutions

- ▶ Full Two-Way Traceability
- ▶ Production Lot History
- ▶ Genealogy
- ▶ Real-Time Inventory
- ▶ Barcode & RFID Integration
- ▶ 21 CFR Compliance
- ▶ Audit Trail
- ▶ MOM Infrastructure Provides:
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Approach to Traceability



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Visual Workflow

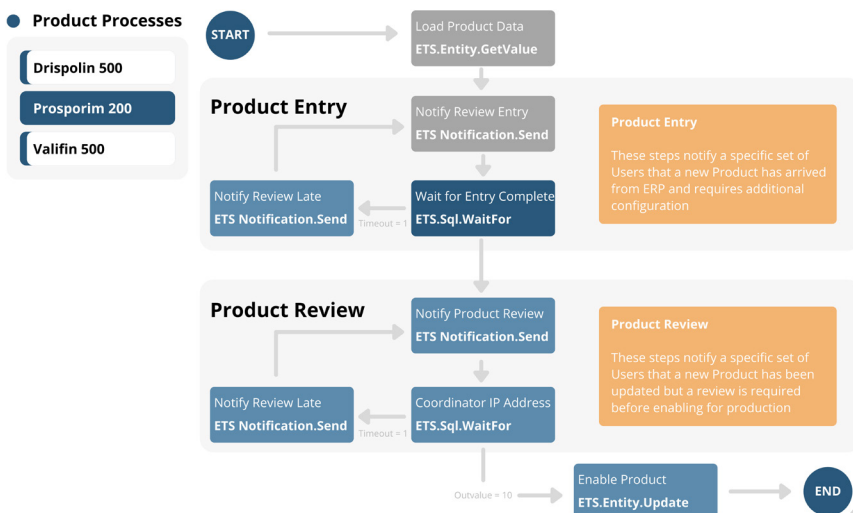
Challenge

Manufacturers struggle to gain visibility into their latest processes to address quality, downtime, compliance, maintenance, and all other functions required to successfully run a plant. These processes are usually paper-based, known by only a few stakeholders, and not properly documented and managed to name a few issues. A Manufacturing Operations Management (MOM) Visual Workflow solution solves these problems, while capturing tribal knowledge across all systems, allowing for tracking and visualizing all steps, and providing a mechanism for process continuous improvement.

Benefits

Benefits of Visual Workflow:

- Connect all Manufacturing areas
- Implement & Iterate Best Practices
- Enable Collaboration
- Capture Tribal Knowledge



Solutions

- ▶ Real-Time visibility for all stakeholders of all workflow aspects
- ▶ MOM Infrastructure Provides:
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Inventory Management

Challenge

Maintain control of inventory to increase production efficiency and reduce working capital requirements:

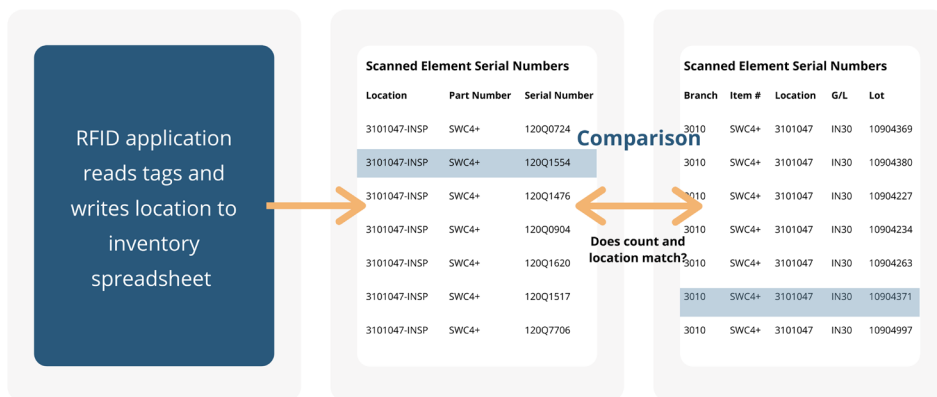
A real-time Inventory Management software system can provide full visibility for inventory movement and production progress to improve on-time delivery while reducing inventory levels and lead-time.

Benefits

Benefits of Inventory Management:

- Improve Inventory Accuracy
- Eliminate paperwork
- Eliminate re-work
- Reduce Manual Reconciliation

Physical Inventory



Solutions

- ▶ Track Raw Materials
- ▶ Work-in-Process Visibility
- ▶ Finished Goods Visibility
- ▶ MOM Infrastructure Provides:
 - RFID Tracking
 - Paperless
 - Scoreboards
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Maintenance Management

Challenge

Manage equipment reliability and longevity by being proactive: Manufacturing Operations Management (MOM) platforms provide insight into production processes, equipment performance, and analysis of real-time data gathered from machines, to help maximize overall productivity through preventive and predictive maintenance management.

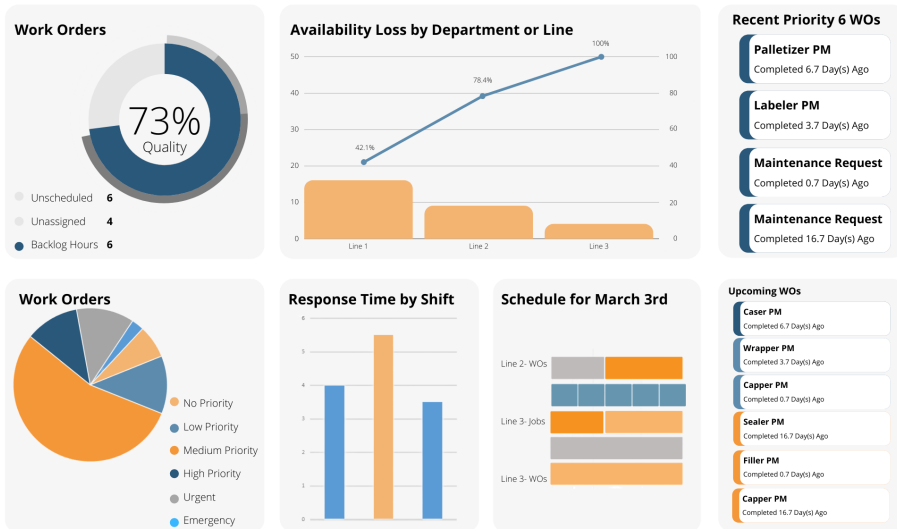
Benefits

Benefits of Maintenance Management:

- Reduced Maintenance Cost
- Extended Equipment Life
- Increased Production with Reduced Downtime

Solutions

- ▶ Work Orders
- ▶ Preventive Maintenance
- ▶ Work Instructions
- ▶ Work Order Scheduling
- ▶ Predictive Maintenance
- ▶ MOM Infrastructure Provides:
 - Condition-Based Monitoring
 - Vibration Analysis
 - Monitoring Agreements
 - Paperless
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Energy Management

Challenge

Optimize operation while spending less on utilities:

Staying competitive in today's manufacturing landscape demands running operations as efficiently as possible as a means to lowering waste while also meeting Sustainability and Environmental initiatives.

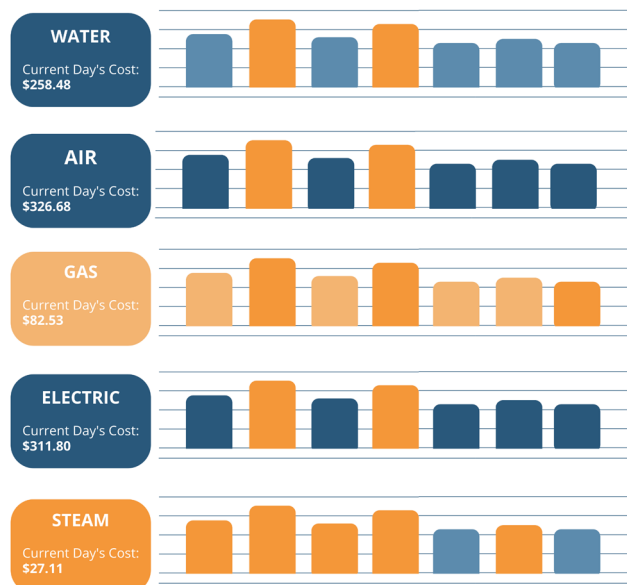
Benefits

Benefits of Energy Management:

- Reduced Maintenance Cost
- Extended Equipment Life
- Increased Production with Reduced Downtime

W.A.G.E.S. for Batching

● Utility ● Daily Trend



Solutions

- ▶ Contextualize utility usage
- ▶ Lower energy usage and cost
- ▶ Notifications and alerts
- ▶ MOM Infrastructure Provides:
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Contact Us

Are you ready to take the next steps toward more productivity with Smart Manufacturing Solutions?



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