

DIGITAL PERFORMANCE MANAGEMENT

An operating system for continuous
improvement of factory performance



**Rockwell
Automation**

Combat today's manufacturing challenges



Limited capital and operating budgets

Do more with the same resources, postpone expansions, upgrades and hiring. Improve overall effectiveness.



Unstable supply chains and material shortages

Develop alternate sources, define flexible substitutions, modify product designs and production processes for agile manufacturing.



Limited availability of production labor

Relentless focus on worker retention, productivity, skills growth and job satisfaction.



Volatile markets and customer demand

Improve customer responsiveness. Accelerate time-to-market. Reduce costs of manufacturing product variants.

What is *Digital* Performance Management?

Digital Performance Management is a system of closed-loop problem solving for continuous improvement.

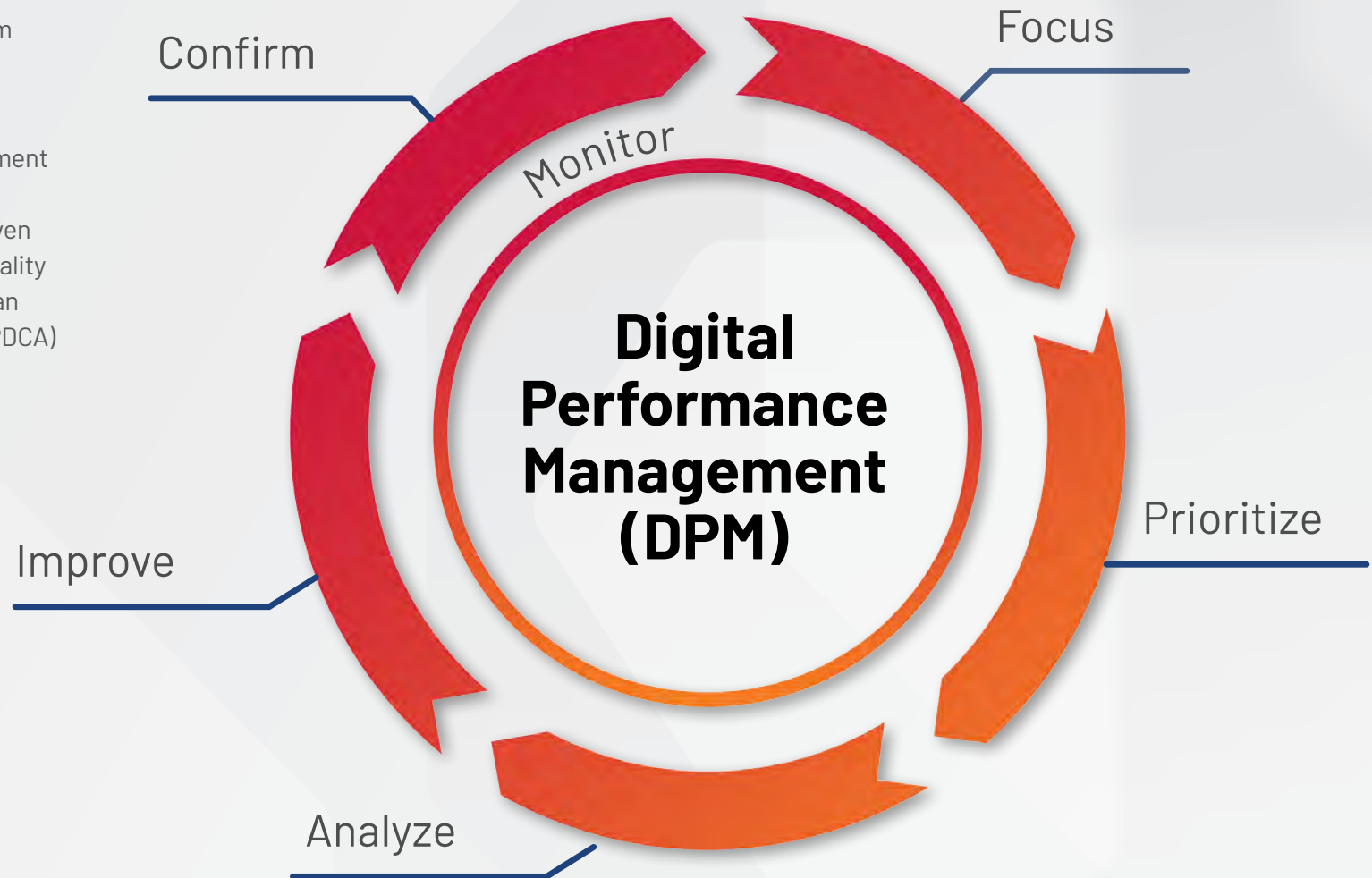
- Digital enables new capabilities and efficiencies in established practices of factory performance improvement.
- The mission of Digital Performance Management is to return hours to production.
- In Digital Performance Management, production time is the currency of measure: All production losses and gains are expressed in hours.
- OEE continues to be applied as the familiar, common productivity metric. Production losses and opportunities for improvement are measured and tracked in hours. Effects on OEE are reported.
- Data is acquired first from automation. Manual data entry by operators is minimized.



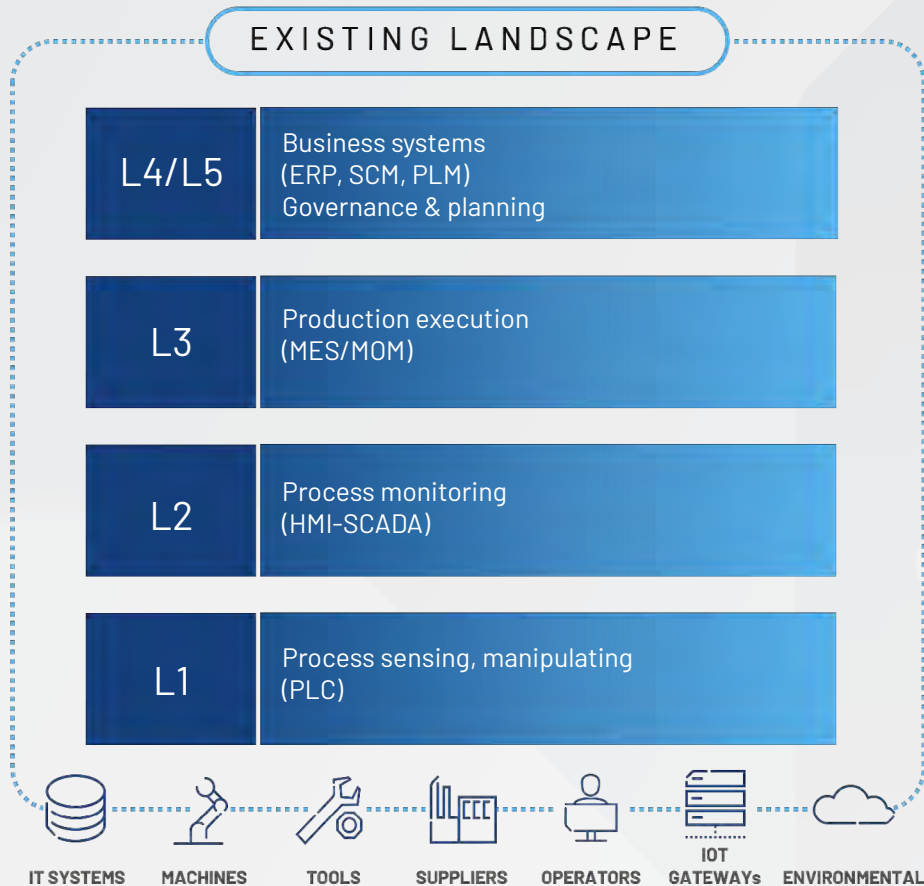
Digital Performance Management principles

Systematic, closed-loop problem solving is a best practice of continuous improvement.

- Digital Performance Management is founded upon timeless, proven principles of data-driven process improvement and quality management drawn from Lean Six Sigma (DMAIC), Deming (PDCA) and Toyota.



Current tools provide data but lack insights needed for transformation



Metrics and reports often lack context and insights that frontline workers, CI teams, factory managers and executives require to improve performance.





With DPM, manufacturers identify, analyze and measure at scale

Consistent focus on constrained resources, standardized analysis and repeatability are key to transformation



Focused problem solving on what will impact your P&L



Accelerate time to fix using analytics on root causes and scenarios



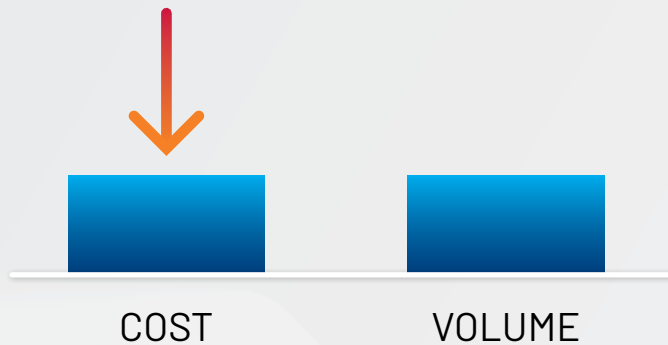
Consistently measure improvements and repeat at scale

What should you measure and how?

Lead with a measurement everyone understands that can easily be translated to financial gain

HOURS LOST

Reduce operating costs

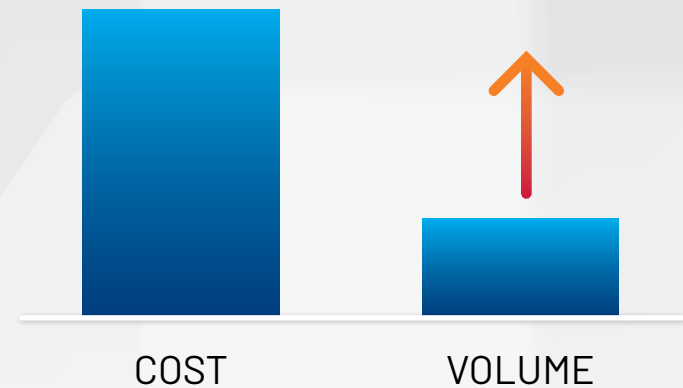


Fewer hours

- Reduce average cost per unit (numerator)
- Minimize or avoid an additional shift(s)
- Minimize or avoid an additional line(s)

HOURS REGAINED

Increase revenue

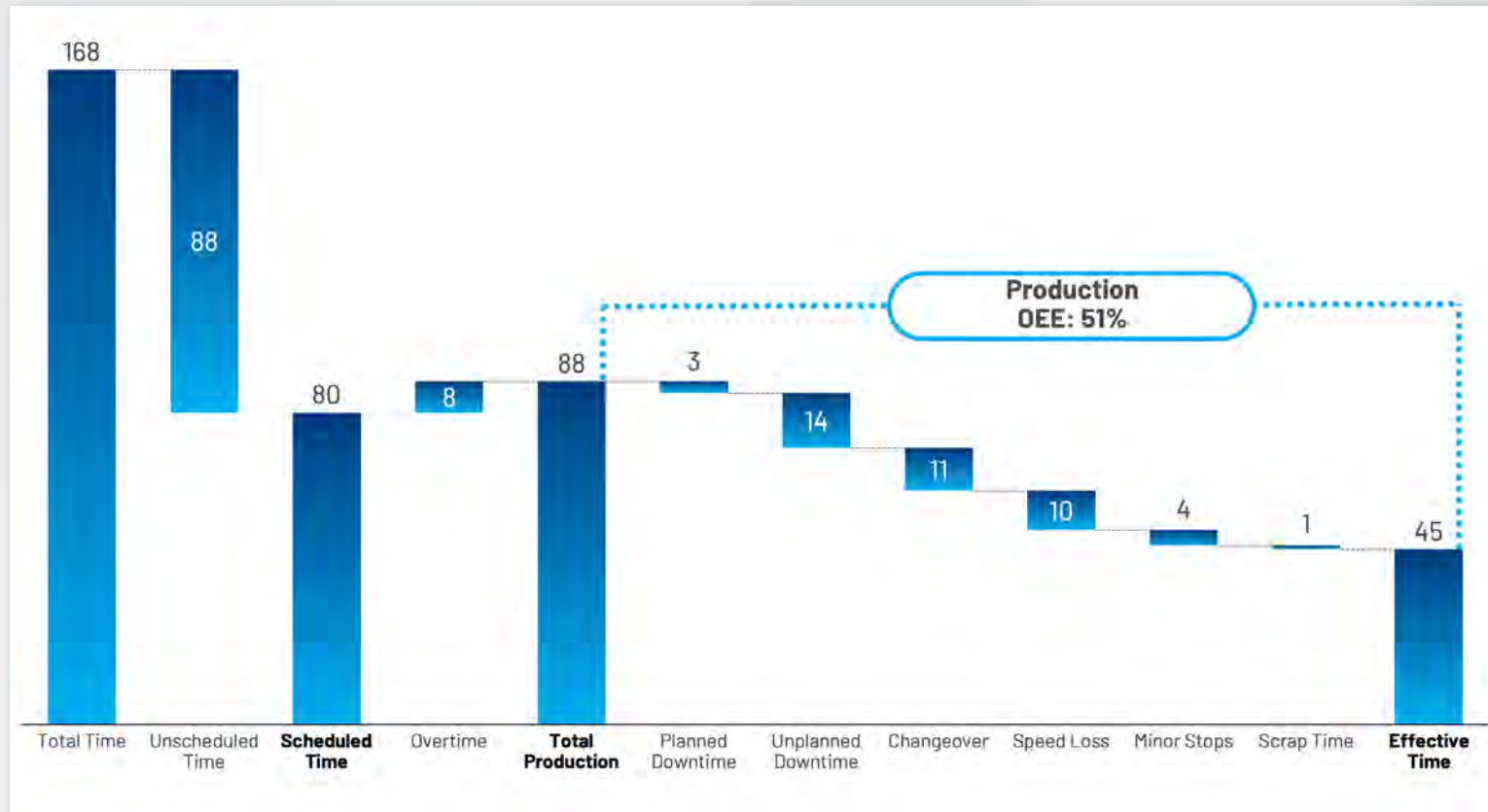


More volume

- Reduce average cost per unit (denominator)
- Produce more units/more volume
- Minimize or avoid an additional line(s)

SAMPLE PRODUCTION SCENARIO: Baseline performance

1 of 20 sites for a discrete manufacturer with \$5B revenue

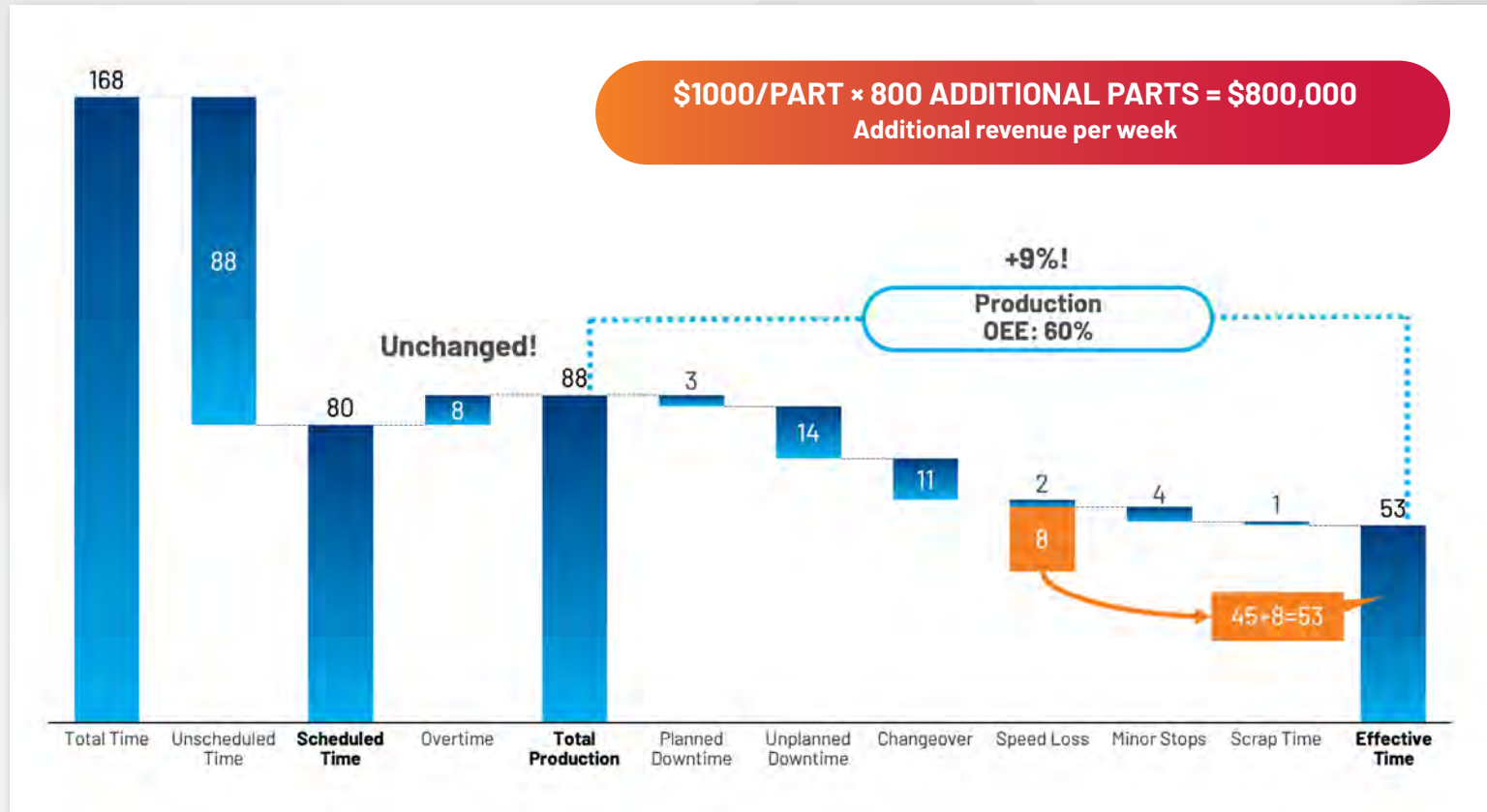


**Ideal rate = 100 assemblies/hour
4500 assemblies/week**

OPTION 1

Increase revenue

Avoid 8 hours of speed loss and convert hours saved into additional capacity

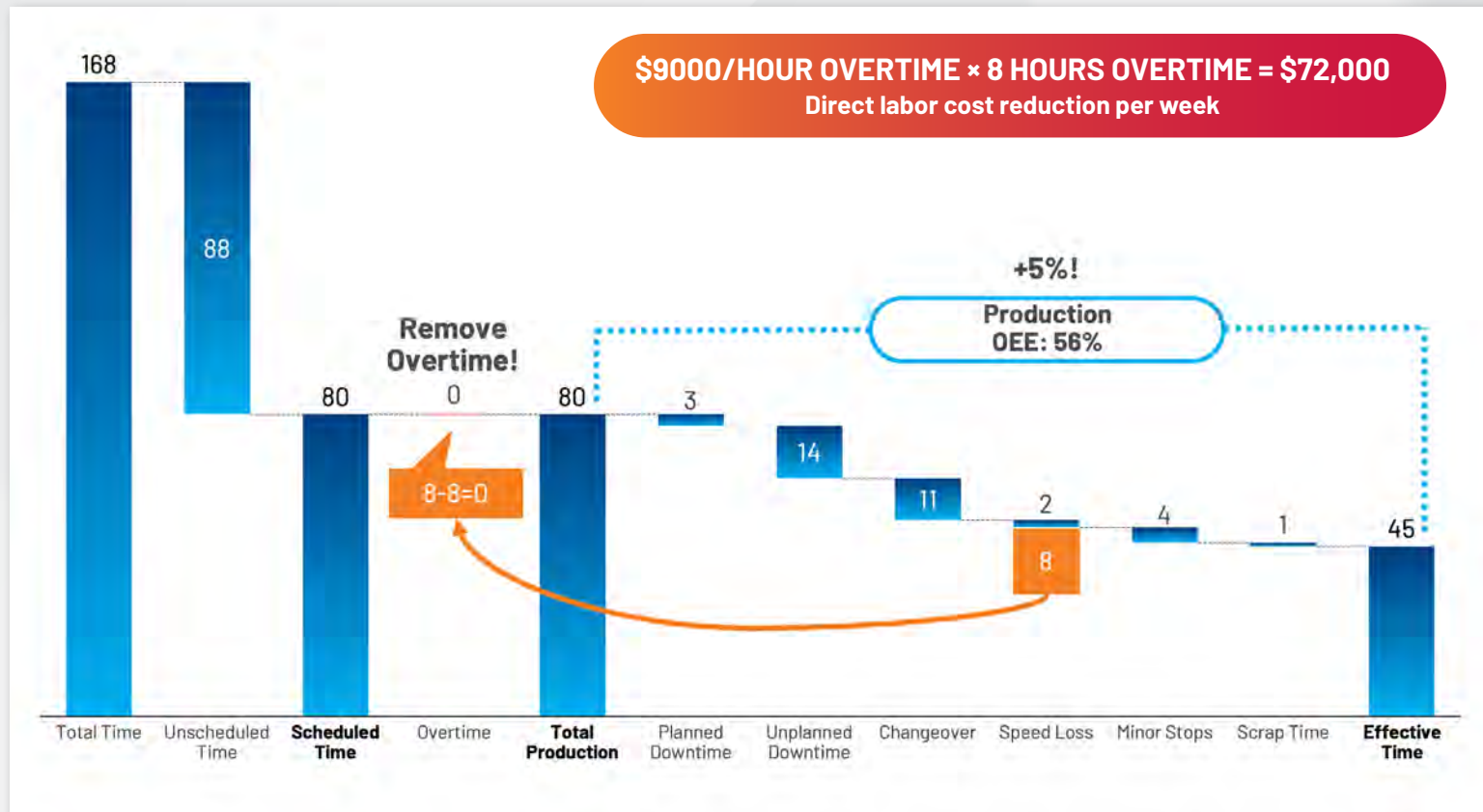


Ideal rate = 100 assemblies/hour
5300 assemblies/week
+800 parts/week!

OPTION 2

Decrease operating cost

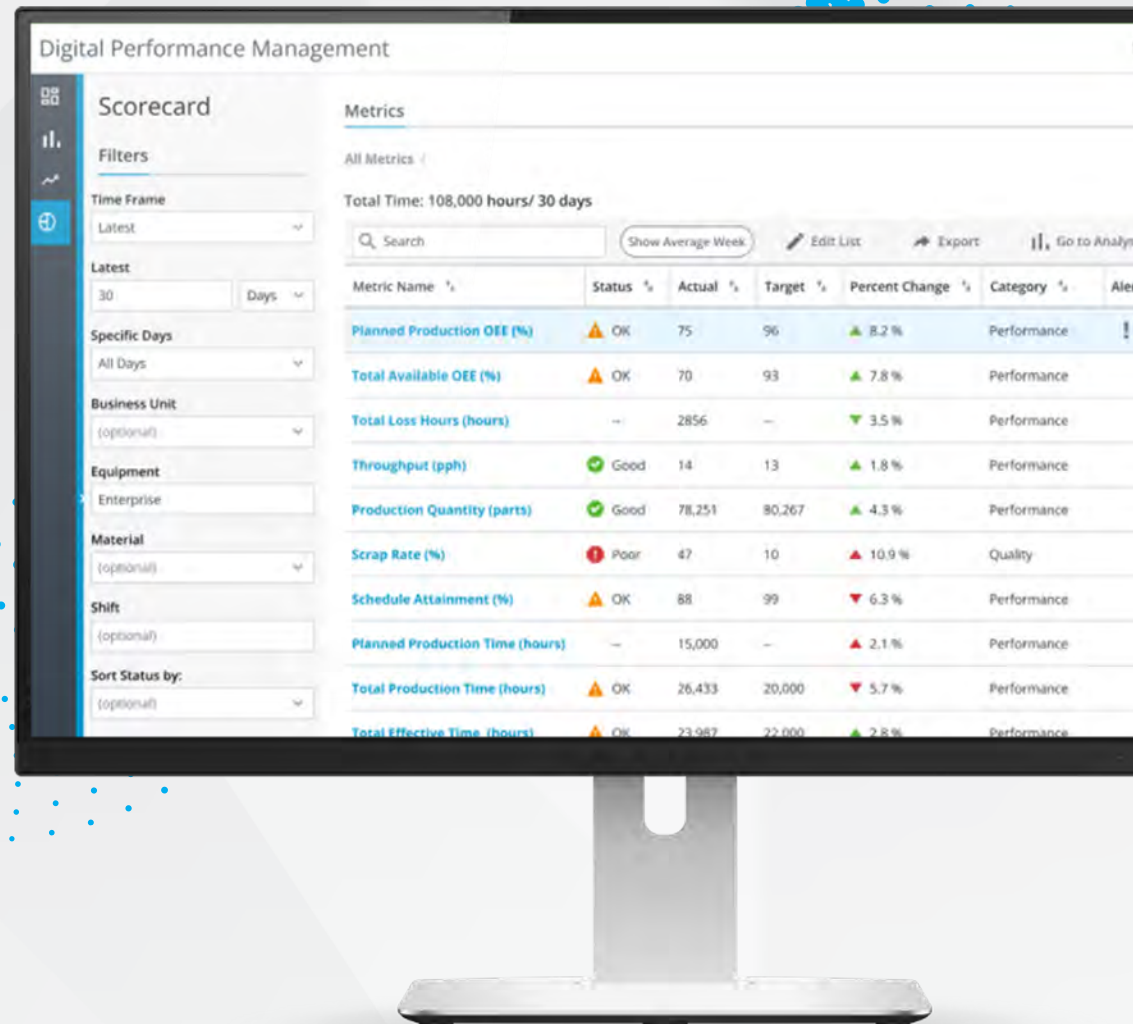
Avoid 8 hours of speed loss and use hours saved to minimize overtime



Ideal rate = 100 assemblies/hour
4500 assemblies/week
Unchanged!

Using time as the foundation, standardize reporting for all levels

With time as the common currency, create a balanced scorecard that allows you to measure performance with consistency across lines and factories.



Integrating executive reporting and continuous improvement

Digital Performance Management connects data, actionable insight and closed-loop continuous improvement across enterprise hierarchies

DIVISION FINANCIAL PERFORMANCE

Gross/ Operating Revenue

Operating Margin

RONA

Growth Rate

FACTORY SUMMARY PERFORMANCE

Availability

Productivity

Quality

On-time Orders

EH&S
Compliance

Wages

Material
ATP

Demand
Forecast

PRODUCTION LINE METRICS

(Sources of time loss)

Runtime

Scrap Rate/FPY

Changeover

Unplanned DT

Planned DT

Speed
Loss

Micro-stops

Waiting
Labor

Waiting
Material

Tooling/PM

MANAGE
AND IMPROVE
PERFORMANCE

Digital Performance Management drives the balanced scorecard

Digital Performance Management connects data, actionable insight and closed-loop continuous improvement across enterprise hierarchies



SCHEDULE ATTAINMENT

Utilization of factory availability

Production-to-plan



PRODUCTION PERFORMANCE

Utilization of productivity time

Asset availability and performance at or above plan

Operation at bekido rate or better



PRODUCT QUALITY

Product yields at or above best demonstrated



WORKFORCE PRODUCTIVITY

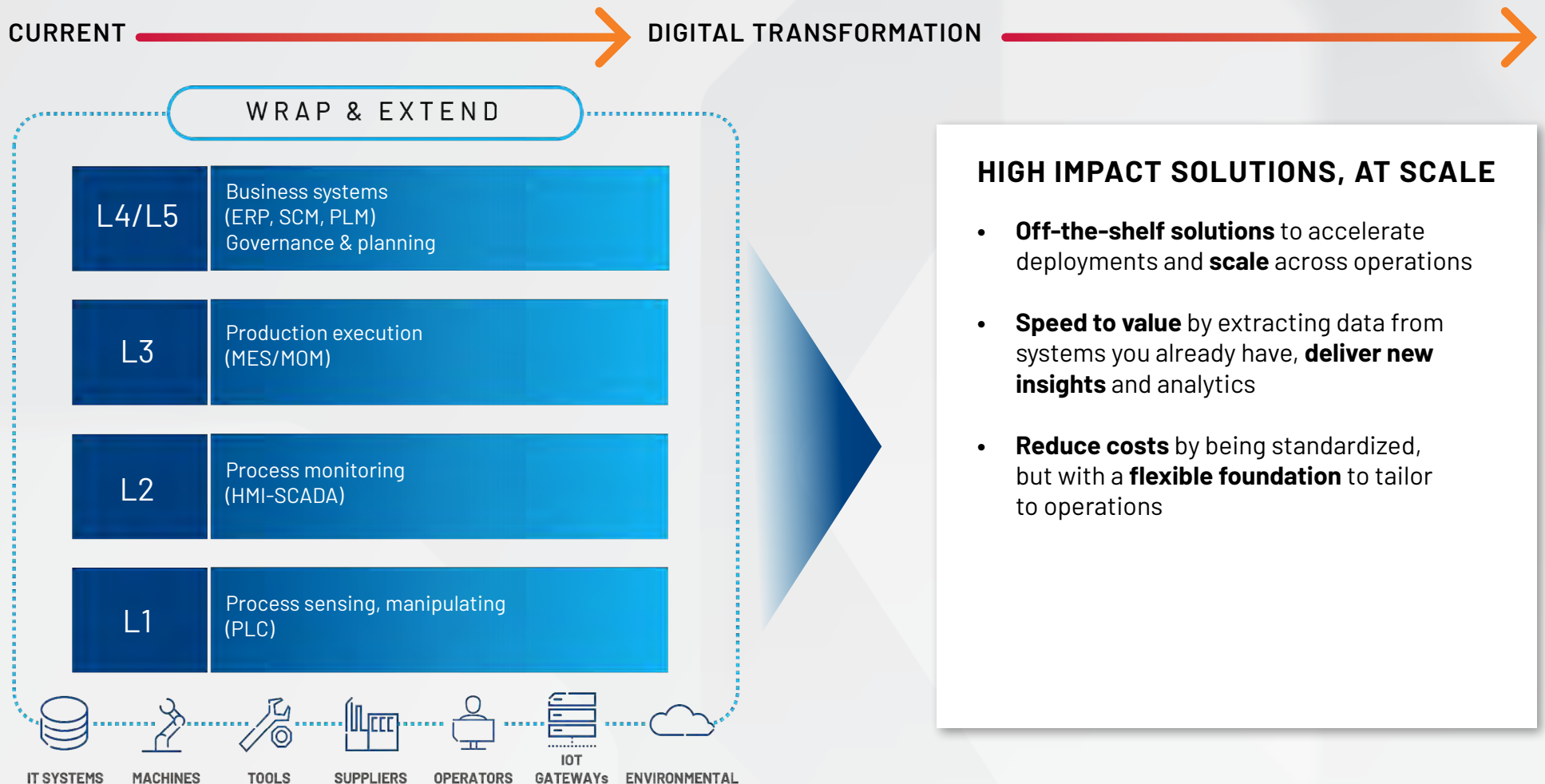
Results of process improvements and lean initiatives



FINANCIAL PLAN ATTAINMENT

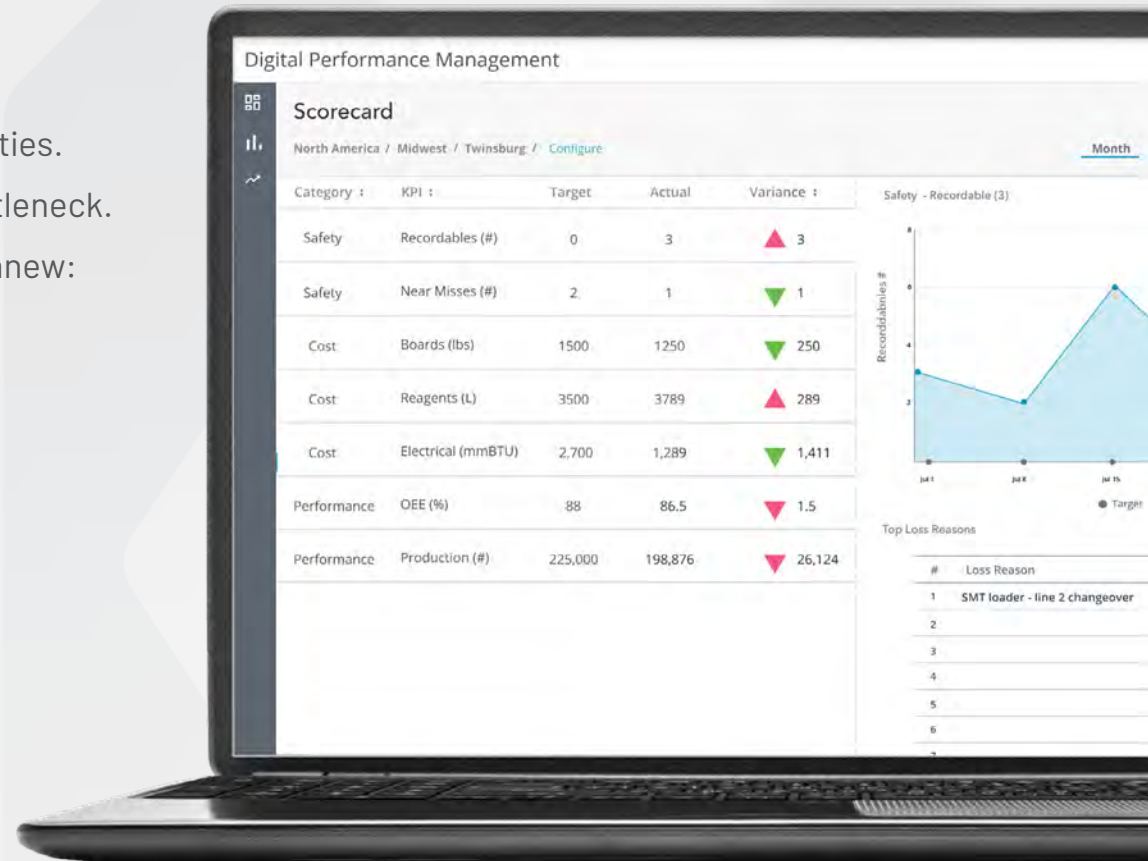
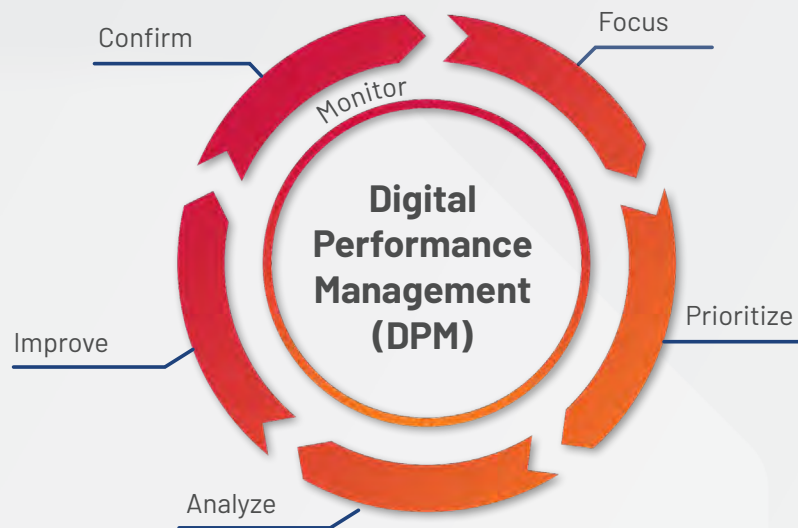
Revenues, costs, operating and net margins improve through digital performance management driven CI initiatives

Digital Performance Management drives the balanced scorecard



Using a standardized scorecard for line-wide and enterprise-wide factory KPIs

- Map results of continuous improvement initiative(s) to scorecard categories, lines and work center productivities.
- Success is also demonstrated by movement of the bottleneck.
- Begin the Focus > Prioritize > Analyze > Improve cycle anew: Closed-loop problem solving.



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Publication INFO-SP037A-EN-P, May 2023

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