



# Introduction

An out-of-the-box solution to outperform your competitors probably sounds too good to be true. But when modern manufacturers face what may seem like unique setbacks, most issues in the industry share a common thread, such as losing production hours, monitoring the effectiveness of continuous improvement (CI) projects, or determining which bottlenecks should receive the highest priority.

ThingWorx Digital Performance Management (DPM) is a closed-loop problem-solving solution built to address such concerns based on four critical capabilities: prioritize, analyze, improve, and validate. Taking a traditional approach to performance management often leaves manufacturers stuck spending valuable time gathering data and less time problem solving. Instead, DPM streamlines data access, reveals the most impactful production issues and provides actionable analytics. Plus, it will indicate the biggest problems in a production system in real time and provide actionable analytics (or enable you to drill down further and conduct your own analysis).

What exactly does DPM actually deliver? Let's look at three areas that have the greatest impact on today's manufacturers, and how DPM systematically addresses and improves each one:

- 1. Prioritizing Improvements**
- 2. Analyzing and Improving Production**
- 3. Validating Improvements**



## Prioritizing Improvements

Every operational manufacturing facility in the world has some method of monitoring its production, be it by line, station, machine, or facility. But the common challenge is to identify and prioritize process bottlenecks.

Most manufacturers rely on overall equipment effectiveness (OEE), which calculates a percentage to the historical performance. But OEE stops short of providing insights into how production lines are performing in real time. And these percentages don't always make for easy comparisons (affecting a small percentage change in a high-value production process may have greater impact than a larger percentage change in a low-value process).

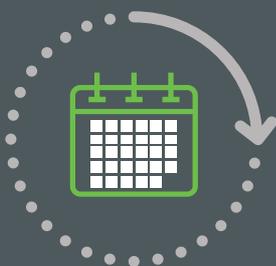
All the effort that goes into data collection for OEE calculations can add up to multiple full-time positions. Plus, it can be a very manual process, requiring a significant amount of time to create spreadsheets and reports – time that could be better spent problem-solving. Instead, these hours are spent gathering data from multiple systems and sources for a weekly meeting just to talk about problem areas or interpret the data.

## HOW DPM DELIVERS

DPM collects information from across plants and considers the amount of used and lost hours to find the places you forfeited production time. This type of bottleneck analysis provides significant objectivity, gauges where you lost the most time in the production process, and conducts time-lost analytics so you can understand how to fix the issue.

Unlike OEE, DPM accounts for all the production time in a 168-hour week, and fully documents where time was effectively used, where it was lost, and why. OEE is an important measure but is often hard to calculate quickly, making it more helpful in looking at data sets over longer time periods. Technology like DPM delivers insights at a granular or enterprise level faster – all based on an objective measure of time lost – indicating where your next improvement effort should be directed.

DPM also eliminates all the time wasted in gathering data and provides enterprise-wide context. The DPM digital dashboard makes it easy to review real-time data, quickly take decisive action, and track how those decisions affect live production.



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# Analyzing and Improving Production

To outperform the competition, manufacturers must continuously improve operations. Measuring the results of improvement efforts can be difficult and time consuming because traditional performance data isn't timely and exists in multiple systems – so it can take a long time to collect and summarize. And aggregate data alone isn't enough – disparate reporting and assumption-based decisions lead to poor prioritization and inappropriate investments.

Without focusing on productivity improvement, your factories will operate below optimal capacity, limiting their potential for revenue growth.

Concentrating on improving operations has proven to reduce operating expenses. For example, [Rockwell Automation](#) was able to use PTC CI technology to reduce labor costs and yield a 33% increase in labor efficiency.

The purpose of continuous improvement aligns with the nature of manufacturing bottlenecks: as soon as you solve the biggest one, the next bottleneck – that wasn't quite as bad as the one before – is now your new, most pressing problem. That is why it is critical to prioritize issues and to track the effectiveness of CI projects.

Actualizing the full potential of your CI efforts means getting the best ROI from your digital transformation efforts.

## HOW DPM DELIVERS

DPM provides real-time contextual data that matters, live all the time, on a digital dashboard that you can use to identify bottlenecks at a glance and track transformational CI projects. The Action Tracker, a standard feature of DPM, confirms how well production losses are being addressed and reports exactly how many hours are saved – making it easy to quantify and compare any initiative's financial impact.



**Rockwell Automation was able to reduce labor costs to yield a 33% increase in labor efficiency via PTC CI technology**

# Validating Improvements

All the efforts to prioritize and improve production should result in streamlined (or increased) throughput. But it's not easy to hit production targets while meeting all the quality specifications and dealing with any problems that occur (i.e. machine breakdowns and supply chain issues).

When problems pop up — and they will — there could be all sorts of implications to falling behind schedule: missing orders, working against a backlog, and ultimately losing business.

On top of the expenses of operating a plant, extra unplanned hours to hit production targets erode your profit margins. So you need real-time insights in order to react to ineffective improvements before you miss your targets or objectives.

## HOW DPM DELIVERS

DPM can identify new capacity restraints, as well as uncover existing ones, enabling manufacturers to reclaim hours via performance monitoring and CI initiatives. Incrementally, those hours can grow production capacity and shrink the backlog, keeping manufacturers on schedule without increasing their expenses.

There's also an opportunity to increase plant flexibility. For example, if you have a network of plants and one of them becomes extremely efficient, you've freed up capacity that you can now shift from a less efficient plant and increase profit margins.

Not only does DPM deliver actionable analytics, but it also validates improvements and empowers decision makers to optimize operations in order to win the market.



## Learn More About How DPM can Improve Production and Cut Costs

All manufacturers face a unique set of problems, including bottlenecks, plant flexibility, and high operating expenses. Thankfully DPM is a lifeline to streamline those production practices to keep you on top of your manufacturing process. DPM can allow you to prioritize safety, understand your production schedule, and reduce factory costs to support your greater production efforts. In short, it can allow you to evaluate whether you hit your forecast goals, if you did so at cost, and how to efficiently move forward. Start achieving double-digit impact with Digital Performance Management.

Check out our recent [white paper](#) to learn more about fueling your digital transformation using DPM!



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