

CASE STUDY:

# CAROLINA PRECISION MANUFACTURING

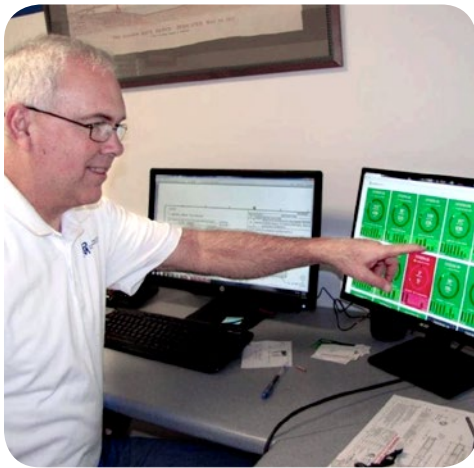
How CPM saved an additional **\$1.5 million**  
in their first year of machine monitoring

## THE PROBLEM

Gary Bruner, the president of Carolina Precision Manufacturing, a contract manufacturer that specializes in small-diameter, close-tolerance CNC Swiss turned parts, had a problem. Over breakfast that morning, Gary had logged onto the MachineMetrics monitoring system on his laptop at home to check the status of his machines assigned to a lights-out operation, but saw immediately that two of his machines were not in production. "What's wrong with machines 35 and 36?" he thought to himself.

**"This was one of the first big lessons we learned about machine monitoring: it is a tool for finding problems that we didn't know we had; for finding and addressing the issues as they came up and not after they had happened."**

**Gary Bruner**, *President of Carolina Precision Manufacturing*



*Gary reviewing his MachineMetrics dashboard on his desktop computer.*

Upon arrival to the shop, Gary learned from his operator on duty that this type of hold up was nothing out of the ordinary, and was in fact a product of inefficient start-up procedures that had simply never been analyzed or augmented previously.

In an industry with razor thin margins, Gary understood that the keys to growth and success were in efficiency and quality. He understood the importance of keeping tabs on production stats, job status, uptime, and setup. However, there was no way to know how well machines were doing in real time. What was causing this additional downtime?



Furthermore, CPM's current methods of measurement and data collection were not only time consuming, but had quickly becoming outdated. Historically, CPM had an employee dedicated to the collection of utilization data. This employee would walk around to each of the machines, collect scrap tickets post-production, talk to operators, and record yesterday's data into their current ERP system; not to mention that this manual data collection was prone to errors, and would take upwards of 2 hours per day. Without the ability to visualize their results, the recorded data was not very actionable.



View of Pareto chart of actual downtime causes produced by MachineMetrics monitoring.



## THE SOLUTION

A few weeks before, CPM, had installed a new machine monitoring software MachineMetrics on all 36 of his Marubeni Citizen-Cincom CNC lathes. While Gary and the team were still acclimating to the monitoring system and how to best use the data it collected, analyzed, and reported, the benefits of MachineMetrics became apparent immediately.

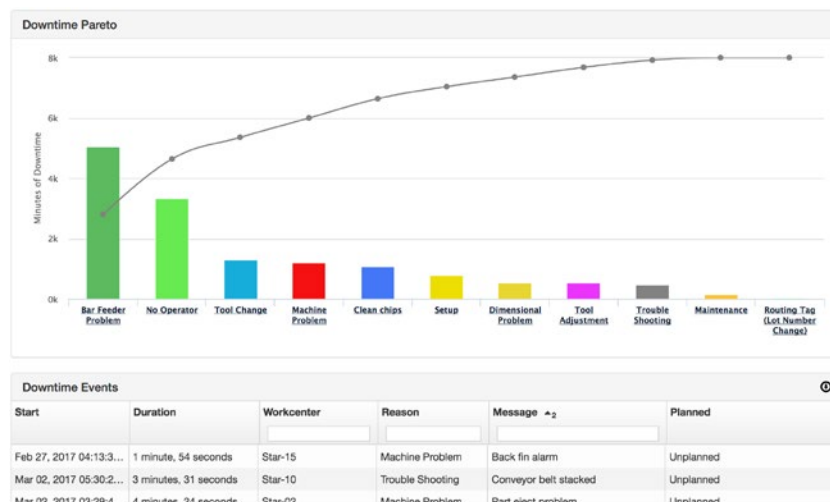
MachineMetrics Dashboards were installed on TV's across the shop floor with tablets mounted at each machine for operator feedback. If a job fell behind production goals, the color of the tile changed, and text notifications were sent to managers, so that action could be taken immediately instead of waiting for the next day or next week.



View of an actual single machine's part count vs goal by hour over any production period

**"I look at it this way: Essentially, machine monitoring is free. We are on track to see at least a 20% increase in shop productivity in our first year with monitoring. That more than pays for the system."**

Gary Bruner, *President of Carolina Precision Manufacturing*



View of Pareto chart of actual downtime causes produced by MachineMetrics monitoring.

## THE RESULTS

For CPM, there was an obvious and immediate benefit in understanding downtime and whether or not their machines were running optimally. After only year one with MachineMetrics, CPM produced:

- an average of 688 additional operating hours per machine
- a 20% increase in Machine Utilization.
- at \$60/hour, that averages out to an additional \$41,280 of billings per machine.
- CPM's initial investment in MachineMetrics was returned within only 11 days of using the software.
- 2 hours per day of administrative savings

**“MachineMetrics enabled CPM to increase capacity by \$1.5 million in 2016 with no additional machines for a yearly subscription fee of only \$44,400”**

*Gary Bruner, President of Carolina Precision Manufacturing*



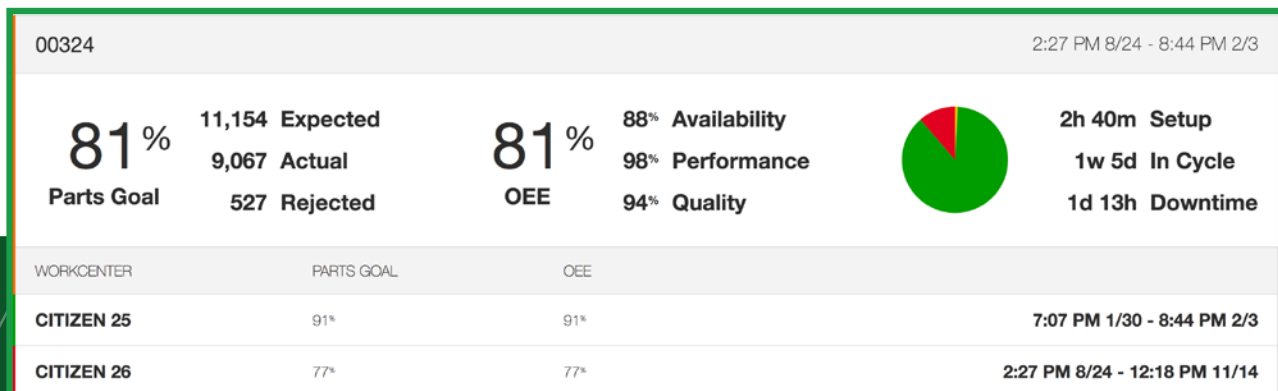
The CPM Shop floor equipped with MachineMetrics tablets and monitor.



**“Within the first 30 days of installing MachineMetrics, a single operator improved 4 jobs in his cell.. We calculated it will save us over 900 hours of annual labor as a result!”**

**Gary Bruner**, *President of Carolina Precision Manufacturing*

CPM's transition to MachineMetrics as a source of data for their production recording has been a game changer in how they go about their day. With real time data, they can respond and react to problems immediately, understand what's happening right now, and allow themselves a much better opportunity to find out what's going on and fix the problem as it's happening versus waiting until it's too late.



**“MachineMetrics holds operators accountable for keeping up with their goals for the current shift - so our team can spend more time working on the harder problems that historical data allows us to identify and measure”**

**Gary Bruner**, *President of Carolina Precision Manufacturing*

Using MachineMetrics, monitoring the live dashboard not only decreased the hours dedicated to the task, but actually improved production quality in general. Within a few months it was clear that machine utilization had dramatically improved. However quality - because it was being measured more accurately, appeared to be slightly lower than it was before MachineMetrics. It's likely that the manually collected data wasn't capturing the entire quality issue before - but with MachineMetrics rejects were counted in real-time. CPM started to focus more on quality, and quality managers became more intimately involved in the system. Having operators use the tablet interface to classify rejections in real-time allowed the quality manager to respond immediately, and eliminated all the paper required for non conformance. This elimination of paperwork allowed both the operator and quality managers to do their jobs more efficiently and resolve quality issues more quickly.

With the knowledge that operators and managers are looking at the same data reports, CPM found that using MachineMetrics motivates operators to keep up with their goals and improved their job satisfaction. Operators pay close attention to the color of their machines as represented by tiles on the dashboard and tablets mounted at the machine. They feel satisfied when their machines are green and "Keeping it in the green" has become a mantra across the shop floor. Operators are able to make faster decisions to improve production speed, availability, and quality.

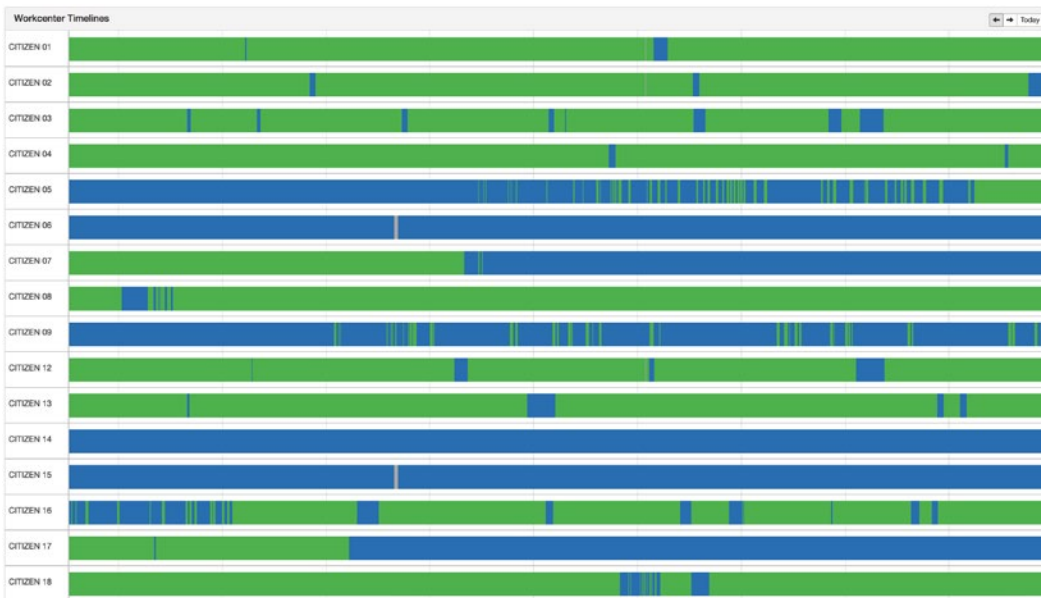
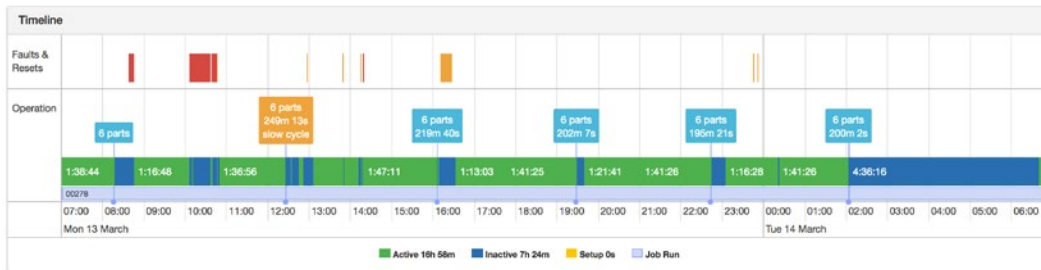
**“Information we get changes the way we work. Troubleshooting using data can discover the root cause of the issue, and make real time changes while relieving communication issues between teams.”**

**Gary Bruner**, *President of Carolina Precision Manufacturing*

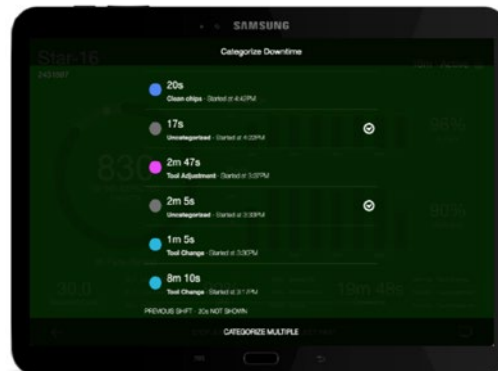


Live dashboards monitoring display production against goals, allowing for instant decisions.

For Managers, the timeline displayed the reasons why the production was falling behind or incurring unplanned downtime. Pareto charts reported in real-time on downtime and quality accurately with automatic data collection, which allowed CPM to immediately identify the most significant recurring problems and solve them.



CPM discovered a new ability to close more business during factory tours, as prospective clients were impressed with their cutting edge technology and appearance.





## THE FUTURE

Gary knows that the traditional manufacturing business model is changing, and that those who want to maintain must be quick to recognize and react to the new challenges that will continue to arise. CPM has used MachineMetrics to inform these decisions, and to develop a transparent, accountable, performance based growth plan focused on efficiency, quality, and staying ahead.

**“It’s all about staying green. Monitoring is a tool that helps operators use want their time more effectively....This naturally aligns employee goals with company goals. We’re all on the same mission.”**

**Gary Bruner**, *President of Carolina Precision Manufacturing*

In just 11 Days, Gary’s investment in MachineMetrics paid for itself, and CPM increased their production by over 20% in 2016 and have their eyes set on even greater gains for 2017. Having access to this data in real time from MachineMetrics has allowed CPM to maintain their success and stand out from the competition while accelerating their growth and profitability. Preparing for the digital industrial transformation is essential for businesses like CPM, and MachineMetrics is a key component in helping them succeed and thrive into the future.

## CPM at a Glance

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**Want to learn more?  
Contact MachineMetrics today.**

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