



How to Get Started with Quality Performance Management

In an effort to catch quality non-conformances earlier and reduce cost, companies are focused on collecting as much performance data as possible. This data is often leveraged by quality and continuous improvement professionals to derive intelligence.

Unfortunately, the conversion from data into intelligence is where many fall short. LNS Research's recent studies and discussions with industry executives have shown that despite any data collection efforts and technological capabilities, many companies lack a strong performance management foundation for transforming information into something actionable.

To gain a better understanding into the foundations of a strong quality performance management program, this report will focus on highlights from the recent LNS Research Global Executive Council meeting. In the meeting, Vice President of Quality & Lean Systems and Environment, Health, and Safety at Accuride Corporation, Jd Marhevko, shared best practices as well as her alternative approach to performance management. She and her team leverage a quality improvement methodology known as the Cost of Poor Execution (COPE), which not only monitors physical product losses, it also includes process losses—something overlooked even by some market leaders.

Specifically, readers of this case study will gain insights into the following areas of quality performance management:

- An overview of Accuride's quality performance management program
- Identifying the right metrics for *your* organization
- The importance of focusing on both process and product losses
- An understanding of how much data is required to get started
- Recommendations and the role of technology in performance management

Understanding Accuride's Approach to Quality Performance Management

Based in Evansville, IN, Accuride Corporation is a manufacturer and supplier of commercial vehicle components. The company produces vehicle wheels, wheel-



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end components and assemblies, and other commercial components under a variety of brand names. Its quality leader, Marhevko, is an ASQ Fellow and holds several certifications including Certified Six Sigma Black Belt, Certified Manager of Quality and Organizational Excellence, Certified Quality Engineer, and Master Black Belt. She is also the co-author of several books including *Sample Size of One*, *Principles of Quality Costs*, and *The Certified Manager of Quality/Organizational Excellence*.

While many companies are focused on measuring and reducing the Cost of Poor Quality (COPQ)—a measure of internal and external failure costs—Accuride focuses on COPE. Rather than focus exclusively on product loss, COPE can be potentially more comprehensive than COPQ because it also factors in costs such as:

- Reworking either a product or process: can include the lost potential of the direct and/or indirect labor
- Lost throughput/efficiency/capacity in product or process

Marhevko explains, “Many businesses look at simply the cost of poor quality. That can end up being a financial exercise in tracking scrap and then ‘re-adding’ back in salvage value. Hidden losses to execute those actions are rarely captured and additional system losses that are incurred can be missed. As such, COPE looks at both product and process losses.”

Identifying the Right Metrics for Your Organization

When attempting to improve quality management, it is important to understand that the right metrics will differ considerably depending on different factors, such as the circumstances and operations of a particular business unit, or if a production site faces unique challenges. The core of COPE is to have it tailored to improvement needs, meaning one site may focus on scrap while another may focus on rework, for example.

According to Marhevko, “Whether you’re measuring the cost of quality or COPE, you need flexibility for different kinds of losses at different sites within the same company. A prescriptive formula that works for one site might not work for another.”

In this vein, every business will have different metrics and KPIs which draw focus, but some common ones include:

- Scrap (site, supplier)
- Rework (site, supplier)
- “Unplanned” freight
- Overtime/Unplanned labor

Cost of Poor Execution (COPE): A measure of unplanned losses in the organization due to improper and/or inefficient execution of operations AND processes.



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- Lost capacity
- Excess & obsolescence
- Labor loss due to downtime
- Warranty/Credits
- Absenteeism/Turnover
- Shrink

A main goal of using COPE is to identify and focus only on what is actionable. It invokes the “80/20 rule.” Using a Pareto chart, the company identifies and focuses only on what is driving the top 80% of losses at a site or facility and subsequently to place efforts on these losses, rather than trying to improve every single available metric and getting lost in the search. This helps ensure that efforts are meaningful.

By eliminating measurements on things that are unlikely to prompt further action, the company has narrowed its KPIs down to 19 used across the enterprise.

“At Accuride, each facility reports on their top five loss categories. This typically includes scrap, rework, overtime (unplanned labor), excess and obsolescence, and shrink (usage variance),” explained Marhevko. “Other items may include lost capacity, unplanned maintenance labor, premium freight, and so on. The top Pareto’d items go into the COPE metric for the site. We allow each facility the flexibility to focus on its own top issues. The idea is that as you constantly work to identify the top five items, the others will come to forefront as the lead items are mitigated. Eventually, the COPE is lessened and margin opportunity is recovered.”

Monitoring and Reducing Process Losses

Accuride focuses on reducing product and process variation by monitoring process capability (Cpk). This is a quality tool that uses statistical analysis to monitor and compare process variability. It is part of the Six Sigma methodology and can be thought of as the ability of your product to meet all specifications.

As explained by Marhevko, “We strive to reach a Cpk of 1.33 or better. Teams monitor the results and work to improve that number on a monthly basis. If we looked at a pool of 1,000 features being tracked for Cpk, one site might have 60 features and another might have 300. We review them and ask, ‘What percent are meeting a 1.33 Cpk?’ There is less scrap and process waste when that percentage gets higher and higher. After following this strategy for some time now, we’ve been able to drive down our COPE and as a result, our COPQ, dramatically. The more processes are stable, the less you have to ‘COPE’ with. I’ve been fortunate enough to use this approach at several Fortune 500 companies, and have had similar results each time. It works. The above really focuses on the ‘quality’ side of COPE versus the ‘lean’ side.”

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Focusing on the Data that Really Counts

In manufacturing operations, especially for organizations with relatively immature performance improvement programs, it is unlikely that every single metric and KPI can be accurately measured without taking up a prohibitive amount of time and personnel resources. This is why it is important to focus on only the data that is usable and relevant, calibrating and refining efforts over time. Instead of trying to optimize individual metrics, an effective approach can be to define the high loss areas and just start the measures. Refine them as you go.

Marhevko is more concerned with measuring what will make an impact. She said, “Trying to spend all that time to refine a measurement and optimize it—that takes our time away from fixing the issue at hand. We already know it’s there. Let us go fix that. Whether it’s 80% or 81% accurate, that really doesn’t matter a whole lot. Let’s go fix the issue and see if we can make it better.”

She continued, “We just say alright, start tracking scrap. If it’s your top 80% item, track it however you can. And as we pull the teams together month by month, we calibrate, review, and refine that measure. And two months into it, three months into it, four months into it, it continues to get refined as to what that definition is. Nobody sat back and waited for everybody to consent six months later and say “This is how we track scrap.” Six months later we already had a double digit reduction corporate-wide in scrap, but we still didn’t have a standardized way to measure. It simply wasn’t our area of focus. We needed to get rapid bottom line results.”

Driving Quality Performance Improvements

It is well-known in the manufacturing arena that the earlier a quality non-conformance can be found in the product lifecycle, the less of a negative impact it will have on costs—both reputational and financial. Accuride takes an interesting and strategic approach to measuring and improving quality costs. Using COPE, the company can allow for flexibility between facilities while also focusing on process quality. The concept of selectively improving the top 80% of losses is also interesting. This is in contrast to many quality performance improvement programs where companies are generally working to improve all loss categories simultaneously.

Additionally, it is important to note the focus Marhevko places on monitoring not just final output, but the processes behind those outputs. Of course nearly every organization tries to closely monitor physical product losses. However, too many do not look at the health of processes when working to improve quality costs. By striving for a Cpk of 1.33 or better, the quality costs that surface because of process variability can be tactically reduced over time. This type of continuous improvement environment is one that many manufacturers strive to achieve.

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This case study highlights the importance of taking not just a tactical approach to quality performance management, but also a tiered one. It is critical that manufacturing organizations do not simply leap into measuring every metric possible without an actionable plan for monitoring, controlling, and optimizing them. Technology can play a crucial role in providing visibility into quality performance.

Additionally, it should be noted that LNS Research's analyses indicate that market-leading manufacturers are facilitating efforts noted in this case study with next-generation quality management analytics solutions. These solutions are often designed with industry best practices for quality performance management in mind, and made to easily integrate with existing data sources and systems. They provide visualization, drill-down, and benchmarking capabilities. While the development of solid quality performance management program is crucial, it is important that leaders are always looking toward the future and considering how technology can accelerate the impact of their people and processes.

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