

## Overall Equipment Effectiveness (OEE)

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LEARN HOW A COMPANY USED GAINSEEKER SUITE TO DRIVE  
OVER \$130,000 INCREASE IN THROUGHPUT AND BUILD A  
DATA-FOCUSED CULTURE FOR OPERATIONAL EXCELLENCE



**15%**  
**Increase in**  
**OEE**

## EXECUTIVE SUMMARY

In modern manufacturing, pinpointing true profitability amidst complex operations is a constant challenge. Traditional financial statements, while essential, offer a retrospective view, making real-time course correction difficult. This white paper reintroduces Overall Equipment Effectiveness (OEE), a powerful, proactive diagnostic tool designed to provide manufacturing leaders with immediate, actionable insights into operational efficiency and its direct impact on the bottom line. It will also use a case study to provide a practical view of how OEE can transform your operations.

OEE is fundamentally comprised of three critical, interconnected metrics: Availability (Are machines running?), Performance (Are production goals being met effectively?), and Quality (Is the output meeting standards, ideally as first-pass yield?). These three ratios are multiplied to provide a comprehensive OEE score. While the calculation methods for each component, including nuances for Quality Measurement, require careful definition, their combined power reveals a holistic picture of production health.

The thoughtful application of OEE yields substantial benefits, including reduced downtime and repair costs, increased equipment and labor efficiency, higher staff productivity, and improved production capacity. It serves as a scalable metric, applicable from a single asset to an entire supply chain, enabling strategic prioritization of improvement efforts across the organization. Industry successes demonstrate that real-time OEE dashboards and analytics empower operators to act immediately on data, leading to faster issue resolution and improved overall performance.

For instance, manufacturers prioritizing real-time data are often "Best-in-Class" industry performers. Furthermore, the tangible impact is clear: one US-based company boosted its OEE from 65% to 75%, resulting in over \$130,000 in increased throughput without requiring additional capital investment or staffing.

However, OEE is not a panacea. Potential pitfalls include its inherent limitations in directly measuring profitability or customer satisfaction, the risk of masking underlying issues due to its composite nature, and challenges in comparing OEE across dissimilar assets or facilities. OEE must be integrated within a larger Key Performance Indicators (KPIs) framework to overcome these.

Hertzler Systems addresses these complexities with its GainSeeker Suite, also available as a cloud-based software called [GS Premier](#). This robust platform transforms raw manufacturing data into sophisticated OEE analytics. GainSeeker provides configurable dashboards, real-time alerts, and intuitive drill-down capabilities that allow users to transcend simple OEE scores and analyze root causes by operator, shift, machine, or product.

It aggregates data from diverse sources—operator input, ERP systems, and direct machine integration—ensuring data quality and minimizing collection costs. The system allows tracking performance over extended periods, offering clear historical perspectives and facilitating continuous improvement. By integrating OEE into a comprehensive data analysis system, GainSeeker Suite and GS Premier empower manufacturers to identify bottlenecks, optimize scheduling, improve uptime, drive increased revenue, grow operating margins, and enhance asset utilization.

## OVERCOMING OPERATIONAL CHALLENGES WITH OEE

Manufacturing profitability hinges on real-time operational insights, a challenge keenly felt by an Actuator Products Division in the transportation industry. Their manual data collection was inefficient and error-prone, leading to delayed critical decision-making. The Network Administrator for Engineering Systems highlighted the urgent need for automated, reliable data to act swiftly.

This company's initial successes in automating package weight data sparked a drive for comprehensive OEE data. Corporate mandates further emphasized real-time information for the workforce, moving beyond time-consuming and error-ridden manual whiteboard updates.

## THE INITIAL PURSUIT OF AUTOMATED DATA COLLECTION

Driven by the need for automation, the company first automated spreadsheet data import. Their ambition grew to direct PLC communication. After an unsustainable, expensive initial software, they sought an open standard, adopting OPC (Object Linking and Embedding for Process Control). However, the SPC package included with their OPC suite proved functionally limited.

Amidst these challenges, the Director of Total Quality Management recognized the power of Hertzler Systems' GainSeeker SPC from prior experience. He saw that while their division had OPC for process data, they lacked a robust SPC system for quality and performance. Collaborating with the Network Administrator for Engineering Systems, they envisioned integrating OPC process data with Hertzler's database.

## HERTZLER'S INVOLVEMENT AND THE GAME-CHANGING SOLUTION

The company's division began deploying GainSeeker SPC and found it successful. Yet, connecting OPC data remained challenging due to expensive or complex middleware options, and their team lacked the time for custom development.

A critical conversation between this business and Hertzler Sales Executive about the business's need for direct OPC connectivity proved pivotal.

Hertzler listened, connecting them with their development team. Recognizing the strategic value, Hertzler swiftly integrated native OPC support into GainSeeker. Byron Shetler, Hertzler's CEO, emphasized OPC's role as the standard for machine communication, opening "great new opportunities for collecting data from production equipment in real time."

Hertzler's commitment to agile development led to the swift inclusion of these new commands in the QA/S GainSeeker® 10.1 upgrade.

The business was particularly impressed: "They had the OPC infrastructure in place... Once we had the beta version with some sample templates, they got it working with over 30 variables in a few hours." They contrasted this with a projected "3-4 man months of intense programming" for an internal solution that would have been far less flexible.

PARTNERING WITH HERTZLER RESULTED IN A  
\$130,000 THROUGHPUT INCREASE

Integrating Hertzler's GainSeeker SPC with OPC connectivity revolutionized the business's operations, delivering remarkable and tangible results and impacting their Overall Equipment Effectiveness (OEE).

As a Six Sigma/Lean shop, the company heavily emphasized OEE. They produced a high-volume product with a sub-four-second cycle time (17 parts/minute, 22 hours/day, six days/week), highlighting the critical need to minimize even minor inefficiencies.

They gained unprecedented visibility into their production by leveraging GainSeeker's real-time data capture and analysis. The system precisely analyzed downtime, moving beyond manual estimates to accurate, data-driven insights into stoppages, speed losses, and quality issues.

The core achievement: The US-based Company boosted its OEE from a baseline of 65% to an impressive 75%. This 10-point improvement translated directly into substantial financial benefits. Enhanced efficiency, driven by reduced downtime and optimized performance, resulted in more than a \$130,000 increase in throughput over several months since deployment. This was achieved without additional capital investment or staffing, demonstrating highly efficient utilization of existing assets.

## Key results and their implications:

- The \$130,000 throughput increase purely through operational optimization showcases OEE's power, enabling them to meet increased demand without costly capacity expansion.
- Color-coded, real-time displays on the factory floor provided immediate feedback to operators, fostering ownership and enabling swift action. This immediacy, a hallmark of "Best-in-Class" performers, led to faster issue resolution and continuous improvement.
- The system provided a robust historical record, crucial for guiding future improvements, identifying trends, and validating sustained changes.
- Operating in a high-labor-cost region, their ability to produce world-class quality through real-time data provided a significant competitive edge.
- The success was underpinned by Hertzler's "superb support," recognized for its proactive approach and responsiveness.

The Actuator Products Division case study powerfully illustrates that OEE transforms from a theoretical concept into a practical, results-driven strategy for boosting productivity, profitability, and achieving sustainable operational excellence when implemented with the right technology and support.

### THE BENEFITS OF IMPLEMENTATION

The journey of the Actuator Products Division showcases the advantages a well-executed OEE strategy delivers across manufacturing.

OEE catalyzes continuous improvement by providing unparalleled insight into operational efficiency, impacting costs, productivity, capacity, and financial health. These advantages resonate throughout the production lifecycle.

Their experience highlights the reduction in downtime costs and repair expenses. OEE systems, by tracking Availability, pinpoint downtime culprits, enabling a shift from reactive to proactive maintenance. This minimizes unexpected stoppages, extends asset lifespan, and reduces emergency repairs and spare parts inventory.

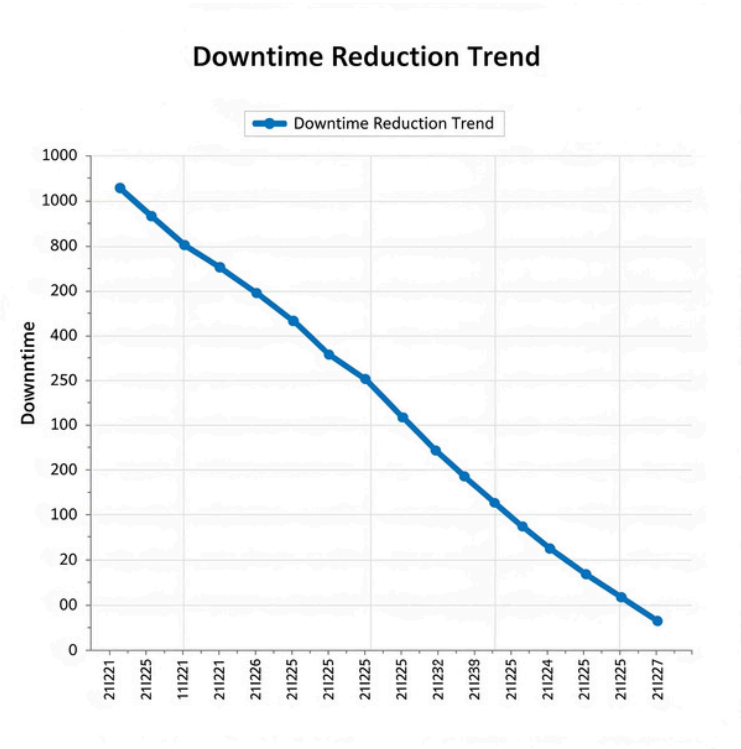


Image: This image is used for illustrative purposes.



Coupled with reduced downtime, OEE fosters a substantial increase in equipment and labor efficiency. By measuring Performance, organizations identify bottlenecks and inefficiencies causing sub-optimal machine speeds. Optimizing settings, material flow, and training boosts overall productivity, producing more output with the same or fewer resources, thus lowering per-unit costs.

The Quality component directly addresses overlooked costs of defects, rework, and scrap. By focusing on reduced quality costs and maximizing First Pass Yield, OEE drives "right-first-time" production. This minimizes raw material waste, rework labor, and costly re-processing, enhancing product quality, customer satisfaction, and safeguarding brand reputation.

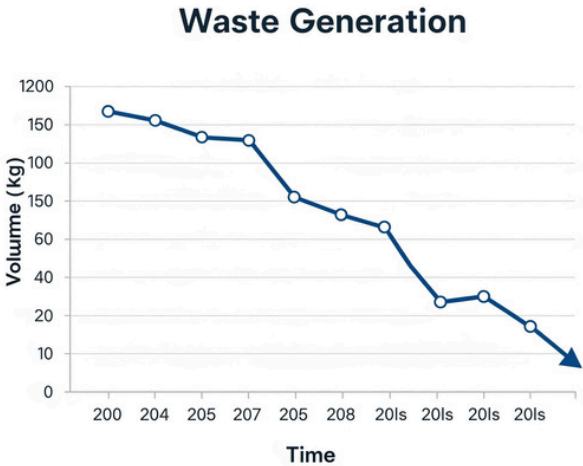
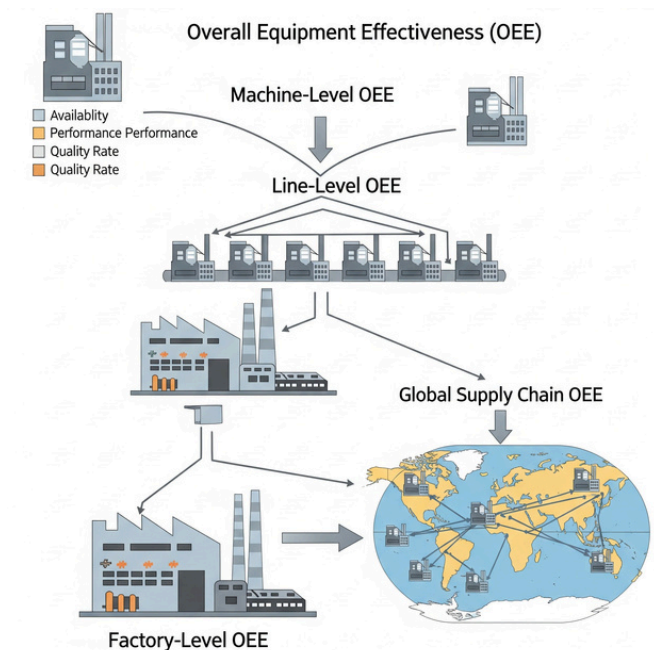


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These improvements collectively lead to a significant increase in personnel productivity and overall production capacity. When machines operate consistently at optimal speeds, producing high-quality output, teams are more productive, spending less time troubleshooting and more on value-added tasks. This efficiency often increases capacity within existing infrastructure, allowing agile response to demand without prohibitive capital or staffing costs.

OEE's key strength is its scalability. It can be applied to any asset or the entire supply chain and standardizes operational effectiveness measurement. Rolling up OEE solutions across multiple assets, lines, and plants provides an enterprise-wide perspective, enabling strategic prioritization of improvement efforts. Tracking improvements ensures sustained gains.



Beyond measurement, OEE functions as a powerful diagnostic tool. Its real-time nature transforms it into a live operational compass.

Robust analytical capabilities provide immediate visual cues on asset performance, allowing proactive answers to questions like "Why are they underperforming?" Drill-down capabilities into data—by shift, operator, product, or machine—enable rapid root cause analysis, empowering shop floor personnel for faster issue resolution and better overall performance.



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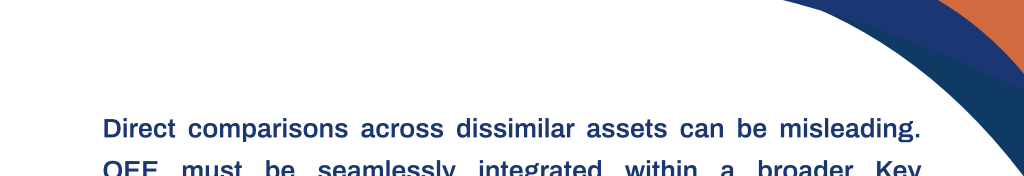
## OEE AS THE COMPASS FOR SUSTAINABLE MANUFACTURING PROFITABILITY

Traditional financial views are retrospective, highlighting the need for real-time insights. Overall Equipment Effectiveness (OEE) is the indispensable strategic imperative to bridge this gap.

The journey of companies like the business with the Actuator Products Division powerfully demonstrates OEE's ability to drive tangible improvements. They significantly increased throughput and profitability by directly addressing data challenges, leveraging real-time insights, and integrating OEE into core strategies. This success underscores that OEE, by unifying Availability, Performance, and Quality, provides a holistic, real-time diagnostic lens into true productivity, translating operational efficiencies into quantifiable financial impacts.

A well-executed OEE strategy offers profound benefits: reduced downtime and repair costs, increased equipment and labor efficiency, and optimized resource utilization. It fosters "right-first-time" production, leading to considerable reductions in scrap, rework, and associated quality costs, enhancing customer satisfaction. OEE empowers personnel for data-driven decisions, boosting productivity and expanding capacity without heavy capital expenditure. Its scalability makes it a versatile tool, enabling strategic prioritization across the enterprise.

However, as the Actuator Products Division story also implicitly highlights, OEE mastery has challenges. Its composite nature requires careful interpretation and deeper dives to avoid masking underlying issues.



Direct comparisons across dissimilar assets can be misleading. OEE must be seamlessly integrated within a broader Key Performance Indicators (KPIs) framework for a balanced perspective encompassing financial performance, customer satisfaction, and other vital business objectives. OEE is a powerful component, providing the operational heartbeat for overall strategic success.

Hertzler Systems' GainSeeker Suite directly addresses these complexities, as demonstrated by its pivotal role in the business's transformation. By providing sophisticated OEE analytics, configurable dashboards, real-time alerts, and intuitive drill-down capabilities, GainSeeker Suite empowers organizations to harness their manufacturing data's full potential. It aggregates data, ensuring integrity and minimizing collection costs, and allows performance tracking over extended periods. GainSeeker Suite evolves OEE into a dynamic management tool, driving increased revenue, growing operating margins, and enhancing asset utilization.

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OEE is no longer merely an operational metric but a strategic compass for modern manufacturing. OEE enables organizations to maximize productive capacity, reduce waste, and build resilience by providing unprecedented visibility and fostering data-driven decision-making. In a competitive global economy, embracing OEE and leveraging advanced analytical platforms like Hertzler Systems' GainSeeker Suite, now available as a cloud-based service, is an absolute imperative for sustainable profitability and enduring leadership. [Contact Hertzler](#) to start your OEE journey today.

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