Artificial Intelligence >

Why operational visibility matters more than operational assumptions

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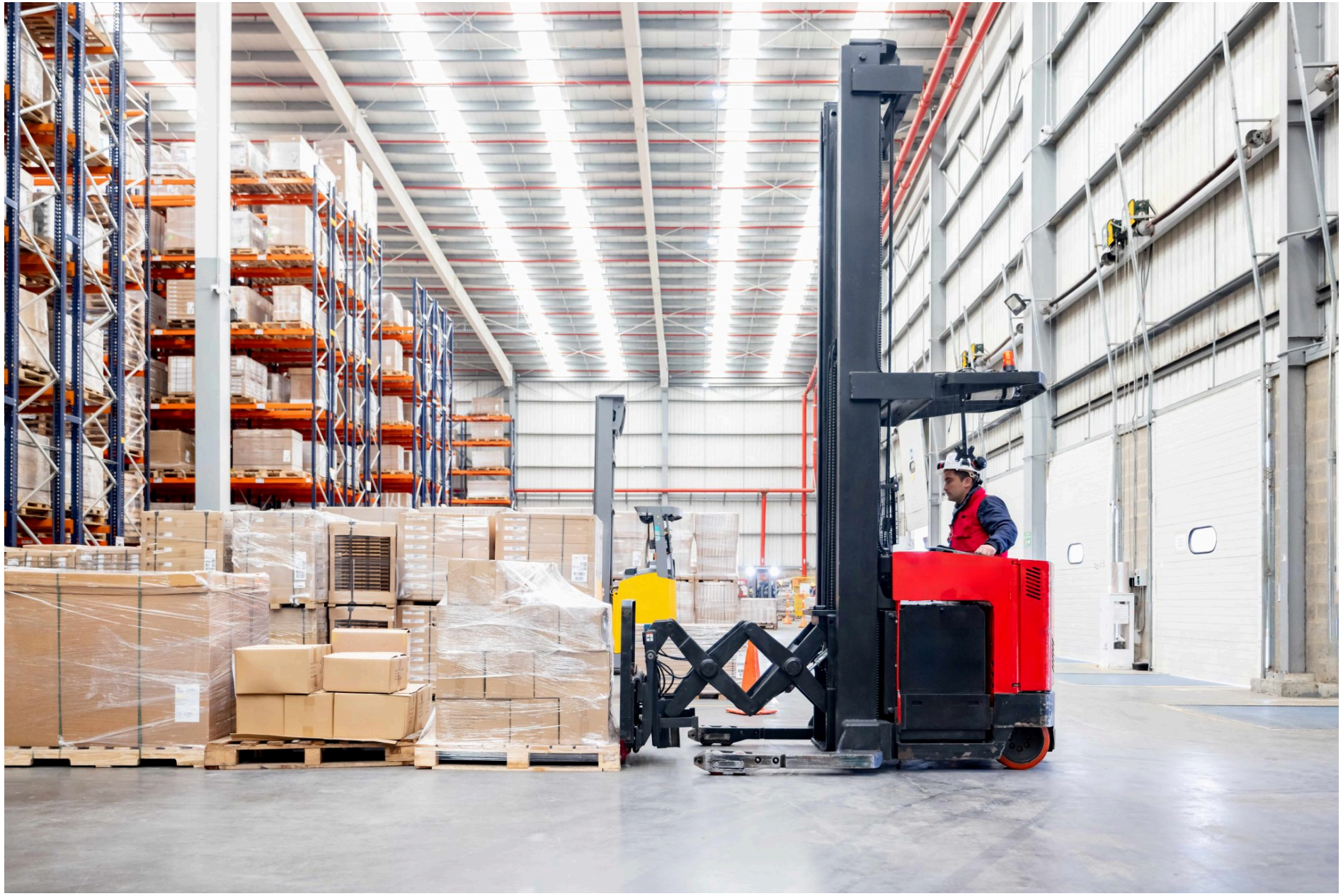
4 min read | David Dohrmann

In a well-run distribution center, data is everywhere. Warehouse management systems track transactions. Timekeeping systems record

labor hours. Dashboards measure throughput, utilization, and performance against plan. Yet, many operations still struggle to answer a deceptively simple question: Why does performance sometimes fall short of expectations?

This challenge was at the heart of a recent proof-of-concept at Schneider Electric's Athens Distribution Center (DC), where teams worked with Leela AI to explore how vision-based operations data could help uncover hidden sources of waste, validate process assumptions, and improve performance.



Seeing the gap between “what” and “why”

Athens DC is a high-volume operation. On a typical day, roughly 1,300 pallets leave the facility, with volumes sometimes reaching 2,000 pallets across approximately 30 outbound trucks. At that scale, even small inefficiencies can have a significant impact on productivity, quality, and safety.

As with many operations, Athens already had access to robust data:

- Warehouse management systems tracked transactions
- Labor systems tracked time
- Performance metrics highlighted gaps between expected and actual results

However, what those systems couldn't easily reveal were the underlying causes—and that distinction proved critical. One of the most valuable insights from the project was that operational *assumptions* and operational *reality* are often quite different.

Challenging long-held assumptions

When performance challenges arise, teams naturally develop theories about their causes. Equipment constraints, workflow delays, staffing shortages, or process bottlenecks are often accepted as explanations. The Athens team was no different.

One commonly cited issue involved wrapping operations—many believed wrappers were contributing to throughput challenges. Yet when operational observations, Value Stream Mapping (VSM), RF audits, and Leela AI data were compared, the evidence pointed elsewhere. The wrapping equipment, as it turns out, wasn't the primary constraint at all.

For Joshua Jones, a Lean Six Sigma Black Belt at Athens DC, that was one of the project's most important lessons: validating assumptions with objective data. Teams naturally develop theories about where bottlenecks exist, but operational visibility helped distinguish perceived constraints from actual root causes. In some cases, commonly accepted explanations could be confirmed; in others, the evidence pointed elsewhere.

That insight extends far beyond a single warehouse. Organizations routinely make decisions based on observations, anecdotes, and historical assumptions. Sometimes those assumptions are correct, but often, they aren't. The challenge is distinguishing between the two before investing time, resources, or capital into solving the wrong problem.

Turning visibility into action

Another revelation from this project was the significant gap between expected and actual time spent on value-added activities. Traditional

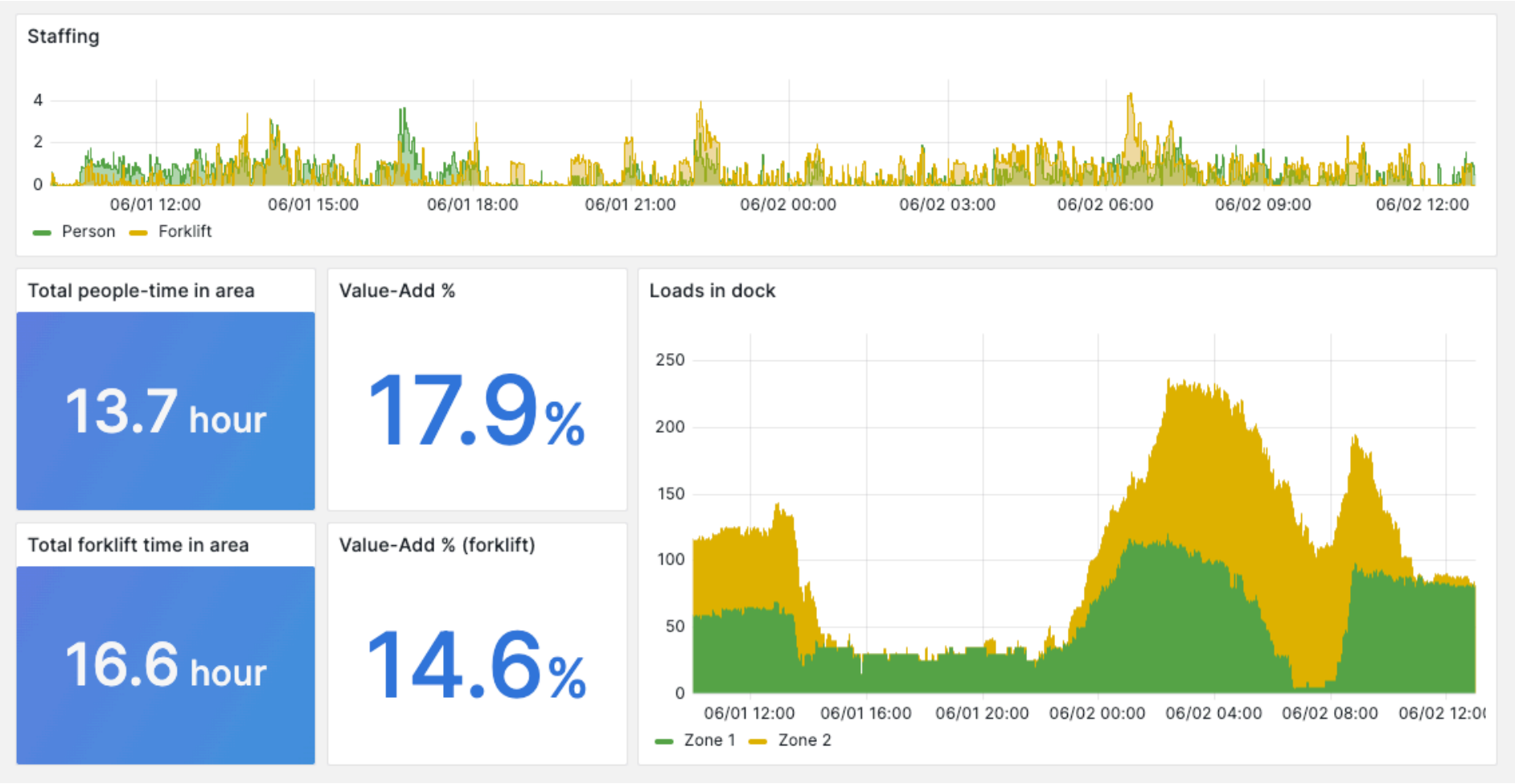
systems showed operators logged into warehouse applications and active within labor management systems. But additional operational visibility revealed that actual time spent performing value-added work was considerably lower than expected. In some cases, nearly 27% of available capacity was lost to activities that didn’t directly contribute to outbound throughput.

Athens Distribution Center team members lead pallets onto truck with forklift. Leela AI detects this as value-add activity and measures where it takes place on the floor and how long it takes. This data is aggregated across the facility to

create detailed accounting of actual staffing, total value-add time, and overall performance efficiency.

The team didn't treat this as a disciplinary issue. The goal wasn't to monitor individuals; it was to understand how work was flowing through a complex operation. For example, where were barriers emerging, and how could teams improve safety, quality, and performance?

The project also prioritized the importance of privacy-by-design. Leela AI's approach doesn't rely on facial recognition, assign identities to individuals, or record audio. Instead, the platform applies irrevocable identity protection to video data, helping protect employee privacy while preserving the operational context needed for continuous improvement.



People, forklifts, and loads are continuously measured, making it easy to track activity, identify bottlenecks, and understand the impact of operational changes.

The team's performance efficiency target was 75%, but the project revealed operational barriers that needed to be addressed first. The target was

temporarily adjusted to 60.5% to establish a realistic baseline while improvement efforts were underway. Once expectations and accountability were aligned, operators consistently achieved the new standard within two to three weeks. Overall efficiency improved from 44% to 50%, the highest performance level recorded at the site. For Jones, that outcome reinforced an important principle: Technology creates visibility, but people create improvement.

The connection between productivity, quality, and safety

The value of operational visibility also extended beyond productivity metrics. By linking visual evidence with warehouse management system data, the Athens team strengthened shipment traceability and investigated quality issues more effectively. In Q1, 16 quality incidents were resolved

through this process, helping the site avoid approximately $146,000 in rework, credit, and material costs.

The project also provided new perspectives on safety. Rather than relying solely on incident reporting, the team gained greater visibility into everyday behaviors and process adherence. This helped establish a clearer baseline for understanding safety culture and identifying opportunities for improvement before incidents occur, a concept safety professionals often describe as the use of leading indicators.

In practice, productivity, quality, and safety are rarely independent objectives. They are interconnected outcomes of how consistently work is performed. Operational visibility helps organizations understand those connections more clearly.

From proof-of-concept to future potential

The Athens initiative remains a proof of concept, but it is already helping inform broader discussions about how AI-enabled operational intelligence could support industrial operations in the future.

The original vision was to evaluate how Leela AI capabilities might eventually integrate into Schneider Electric's Industrial Services Hub within EcoStruxure™ Automation Expert. While that integration is being planned, the Athens deployment provided an opportunity to validate business value before pursuing broader architectural integration.

Learn more about Schneider Electric's Industrial Automation Services, or contact IAServices.OCCustomerQuery@se.com.

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