EASE

Customer Story

Global Tire Manufacturer Uses EASE to Eliminate Systemic Quality Problems

A large tire manufacturer with plants and technology centers across multiple continents implemented EASE to get better results with layered process audits. The company ultimately developed a strategy using EASE to uncover systemic quality risks, resulting in increased identification and prevention of potential quality escapes.

Background

The company — an automotive supplier with over $2B in annual revenue, over 4,000 employees, and dozens of manufacturing sites worldwide — initially started conducting layered process audits (LPAs) using a labor-intensive paper- and spreadsheet-based method. When it became a requirement to conduct LPAs across all their sites, the organization quickly realized that it was near impossible to scale and needed a digital-first solution.

Manual Processes Created More Work with Subpar Results

The paper- and spreadsheet-based system was rife with difficulties that put the company at risk for costly mistakes and errors. Tedious tasks included:

- [x] Manually entering audit findings from paper checklists into spreadsheet format

- [x] Updating forms and distributing checklists

- [x] Completing mitigations in a timely manner

- [x] A large amount of labor involved in scheduling and executing audits

The company spent six months using an LPA system in one department without seeing the desired results. According to one senior manager, "It just made everything difficult. To roll it out to 40 separate processes just wasn't going to work."

Seeking a Catalyst for LPA Success

The tire manufacturer decided to try EASE to reduce the administrative burden of paper-based audits and the difficulty involved in achieving meaningful quality improvements.

"We needed a better way to implement LPAs," says another quality leader at the company. "EASE wasn't as resource-intensive as using spreadsheets."

Ultimately, the manufacturer decided to implement EASE because of the simplicity of scheduling and data collection.

"It uses all the rules you set up to automatically schedule audits, and you can pull up data from audits that were completed even just a couple of minutes ago," says one of the company's industrial engineers.

"That's made it a lot easier to expand our audit coverage across the rest of our plants beyond the initial pilot areas where we had started with paper and pencil," he adds.

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A Clear Win for the Plant Floor and the Top Floor

Rolling out EASE at its plants delivered significant results for the tire manufacturer, giving the team the ability to:

- ✓ Complete over 200 audits a week for improved data collection
- ✓ Close out mitigations faster to reduce the impact of process failures
- ✓ Generate Kaizen problem-solving events from repeat findings to poka-yoke or error-proof them out of the process
- ✓ Improve management buy-in for LPAs — a critical aspect of LPA success
- ✓ Get real-time visibility into LPA data to uncover hidden problems

The manufacturer also is using EASE for advanced reporting, allowing teams to pull raw data from a data warehouse to query it and create reports in multiple ways.

"My favorite part of EASE is it's an intuitive system. I was able to log on and start using it right away," says the production manager.

Using EASE to Find Systemic Risks

The automotive manufacturer also used EASE to come up with a strategy for quickly identifying systemic problems hidden across a plant or multiple plants.

This strategy is based on using what the company calls focus questions to do a fast look across all machines when a failure occurs. The goal is to identify which problems are isolated issues versus those that may also be happening elsewhere — and must be fixed quickly before they impact customers.

Dynamic question banks are set up so that each question has one of the following tags or categories:
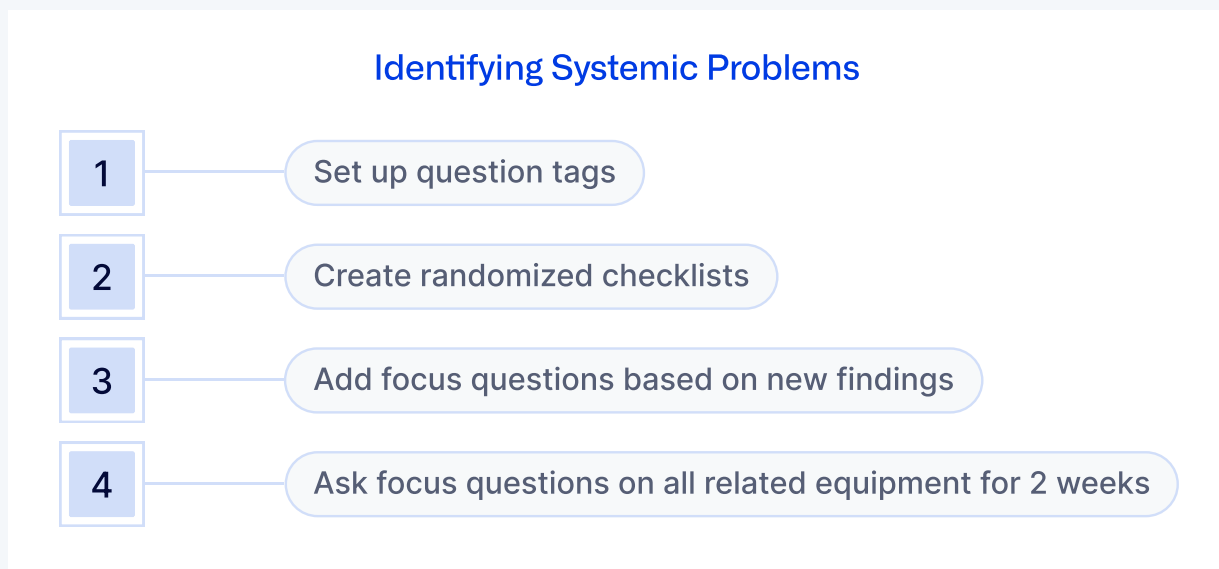
- ☑ Equipment

- ☑ Process

- ☑ Material

- ☑ Quality

- ☑ Project sustainment

What makes the question library dynamic is that the team also uses a sixth category called focus questions specifically when a nonconformance occurs. If a randomized question from one of the five tags above has a finding during an audit, the tag is temporarily changed to a focus question.

Identifying Systemic Problems

1 — Set up question tags

2 — Create randomized checklists

3 — Add focus questions based on new findings

4 — Ask focus questions on all related equipment for 2 weeks

Focus questions are then turned on for all audits on the same equipment type for four weeks. This strategy allows the manufacturer to immediately assess whether a nonconformance is a one-off incident or a systemic problem. "If we change the tag Tuesday evening on third shift, then first shift Wednesday morning we're looking at whether this same issue is occurring across all 30 machines," says a senior manager. "It allows us to move fast, and that's really what's important." According to the industrial engineer, this approach has been instrumental in avoiding quality escapes.

"We're uncovering a lot of quality issues that probably would not have been discovered before," he says.

Seeing Repeat Findings as Critical Opportunities

Identifying repeat findings is a central goal of the team's strategy around LPAs. Repeat findings trigger a Kaizen event or process change, helping the company prioritize its biggest quality risks.

This proactive strategy has helped the manufacturer drive real change with EASE, using the discovery of repeat findings as a leverage point for bigger quality results.

"If we just conduct audits, do some mitigations and keep floating around, we're not going to get anything out of it," says the senior manager. "The goal is to uncover repeat findings and address them with corrective actions. That's where the win actually is. Metrics move on that — not one-off findings."

It's important to note that this type of strategy only works when the bank of focus questions is small compared with other question tags. For instance, the question library in EASE might have 15 questions tagged as quality, with one question from that category asked per audit.

Conversely, having just one or two focus questions allows the team to ask these questions on every single audit for every piece of equipment. With too many focus questions, this would be impossible. The result is that the manufacturer can keep audits short to complete a large number of checks, while still ensuring broad coverage of standards.

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How Dynamic Question Banks Drive Continuous Improvement

The dynamic question banks also have been useful in several other areas that contribute to continuous improvement in the organization:
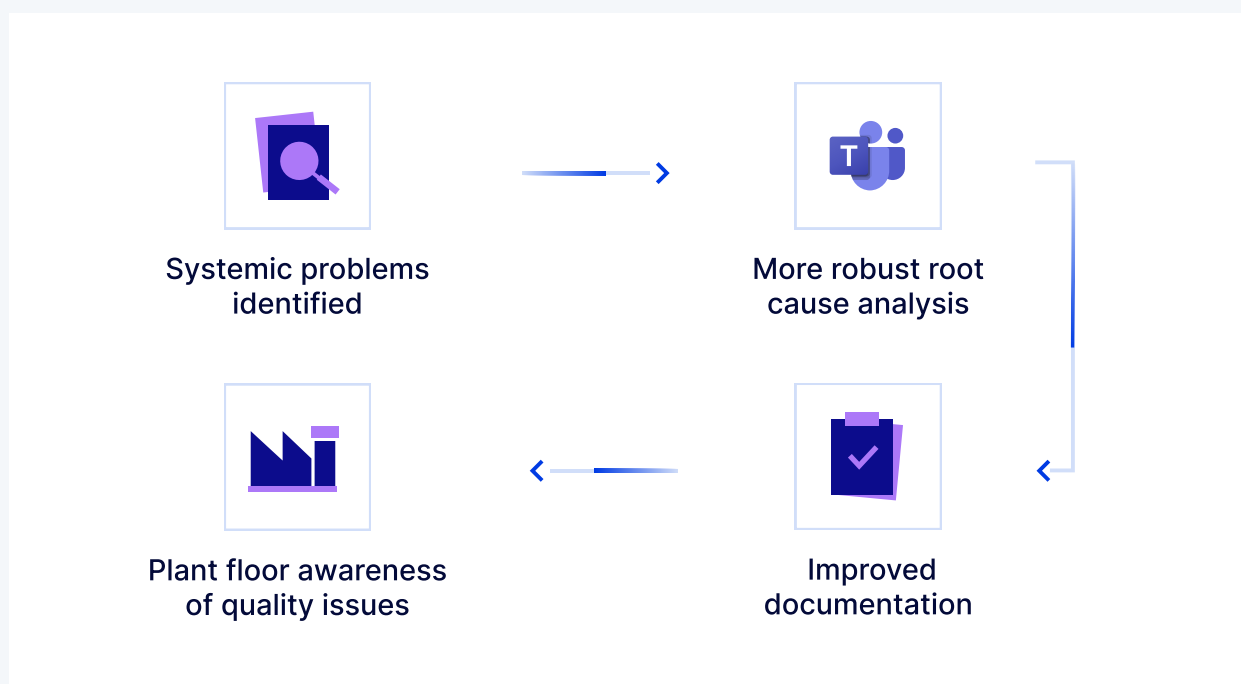
Root Cause Analysis

Being able to quickly pivot questions when quality issues arise can help with investigating the root cause of problems. For example, if a uniformity condition has one of six causes, the team will turn on specific focus questions related to those causes to uncover potential sources of uniformity issues.

Improving Documentation

Sometimes audits reveal instances of undocumented knowledge of processes. In this sense, LPAs help eliminate hidden factory issues by showing leaders what's actually happening on the plant floor. In other cases, LPAs help show the company where standards are unstable and causing systemic issues, such as if work instructions need to be updated

Raising Awareness on the Plant Floor

The company's strategy also involves launching new questions as focus questions. This approach helps quickly communicate with the team about emerging quality issues they need to be aware of.

Systemic problems identified → More robust root cause analysis → Improved documentation → Plant floor awareness of quality issues

Creating Meaningful Organizational Change

Overall, the manufacturer believes the results it's seen would not have been possible without automation, and that implementing EASE has led to meaningful change in the organization.

"The paper model doesn't scale to a 1,000-employee factory," the senior manager says. "I'm passionate about how we use EASE and what we're getting out of it."

Says the company's director of quality: "When you need to manage thousands of these audits — and feel confident that you can effectively harness the data — you can't reasonably expect to do that in a paper system. When you schedule, conduct, and report on them electronically, all of those constraints disappear."

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About Ease.io

Ease.io's cloud-based SaaS platform for manufacturers, EASE, digitally connects and automates critical plant floor work processes, including audits, inspections, task assignments, data collection, and more. Dana, Tenneco, Eaton, and other leading manufacturers in 40+ countries, use EASE to drive quality, safety, productivity, and compliance. Founded in 1986, Ease.io is headquartered in San Clemente, California.

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