REPORT

2026 pulse of quality in manufacturing

About this report

The 2026 pulse of quality in manufacturing survey was conducted by Censuswide on behalf of Octave Reliance. Data was collected from managers and directors at manufacturing firms with 1,000–50,000+ employees across the United States, United Kingdom and Germany. The total sample was 2,263 respondents, collected between late 2025 and early 2026.

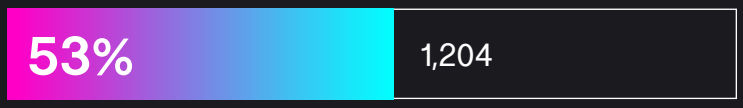
A survey conducted by Censuswide on behalf of Octave Reliance polled:

Respondents

2,263

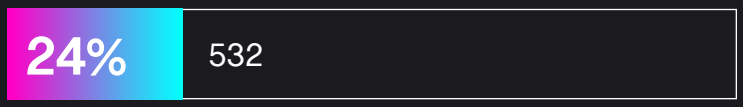
quality professionals at manufacturing firms

United States

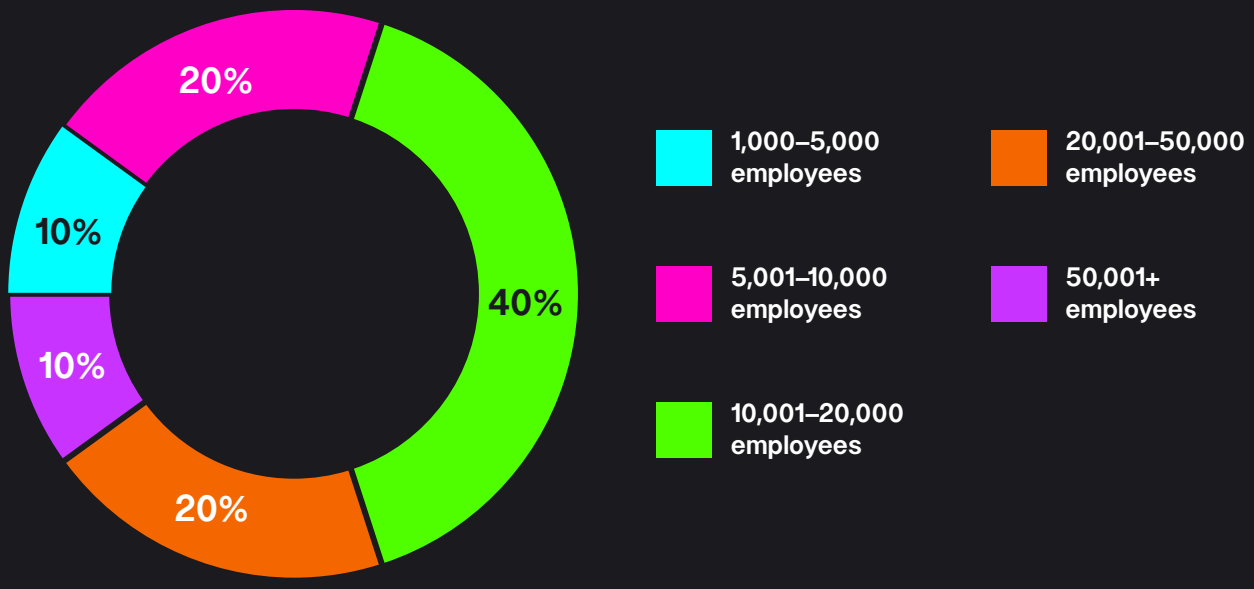


United Kingdom

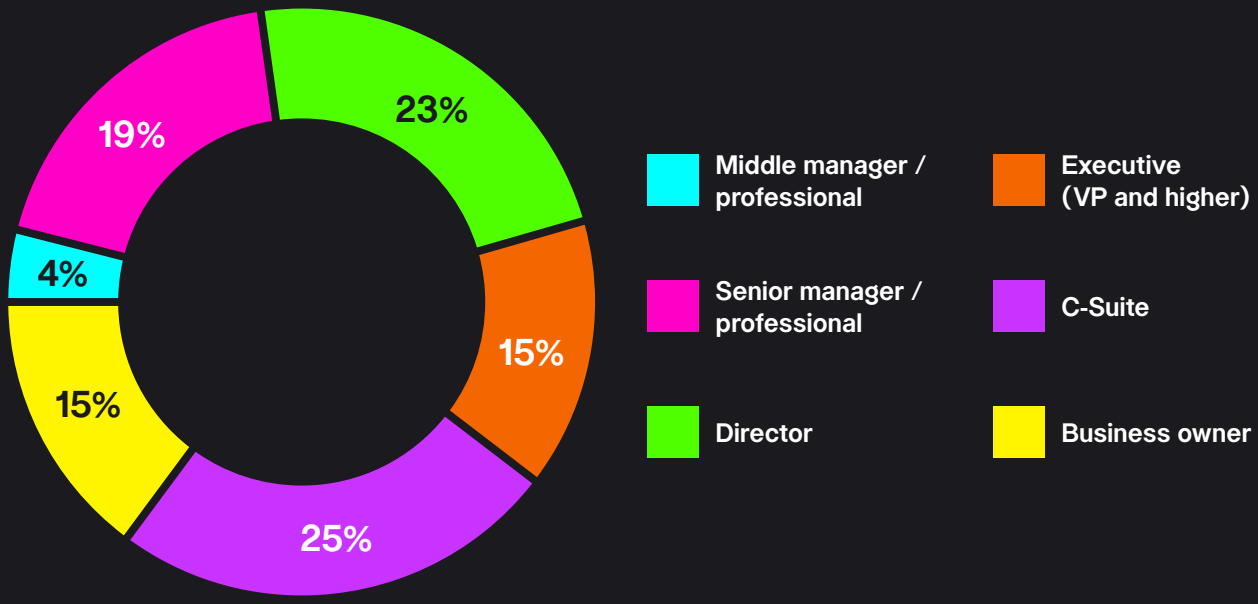
Germany



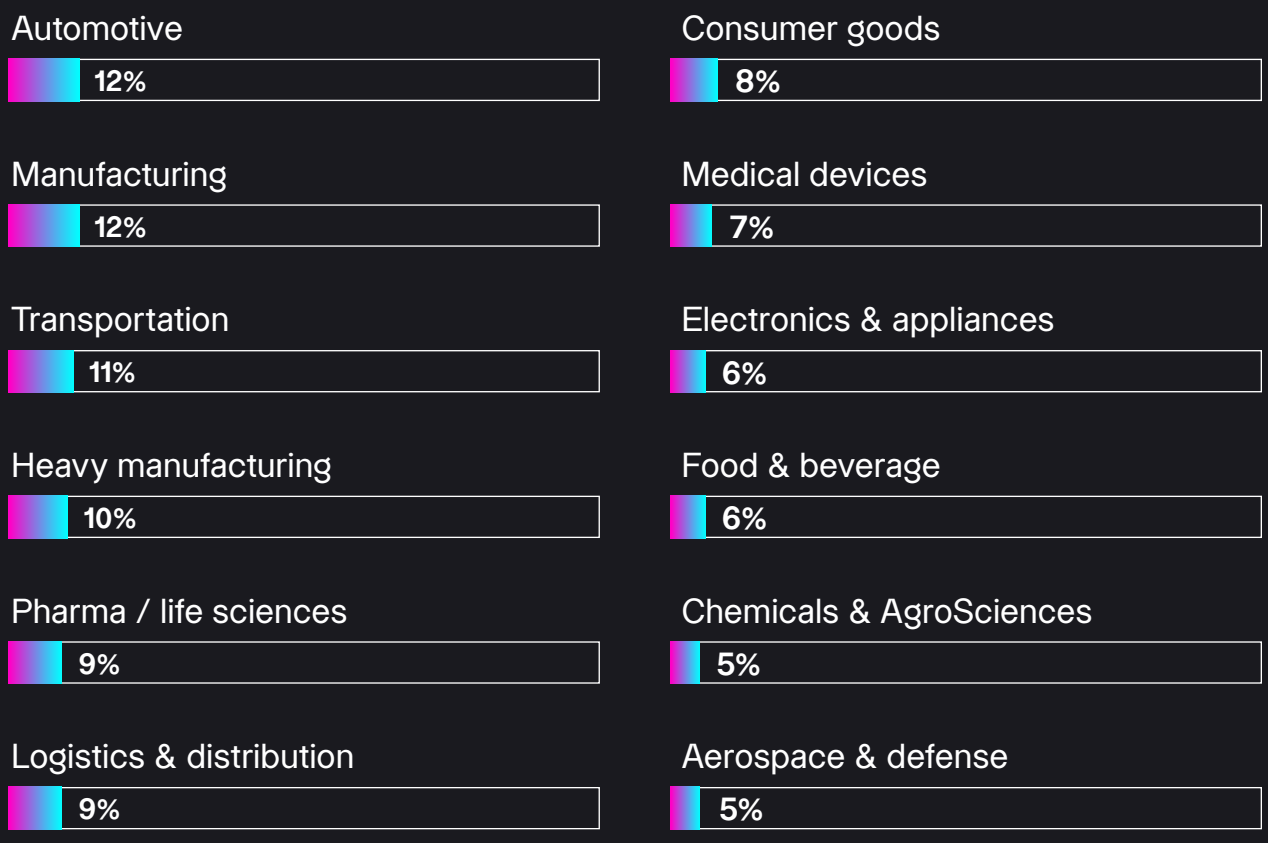
In terms of the size of the company surveyed, the sample distribution was:



Respondents hold the following levels of employment:



Respondents represent the following industries:



The external forces

Two external forces are shaping manufacturing and every manufacturer is navigating them at the same time — ***workforce shortages and tariffs***.

The workforce shortage is a deep, ongoing problem

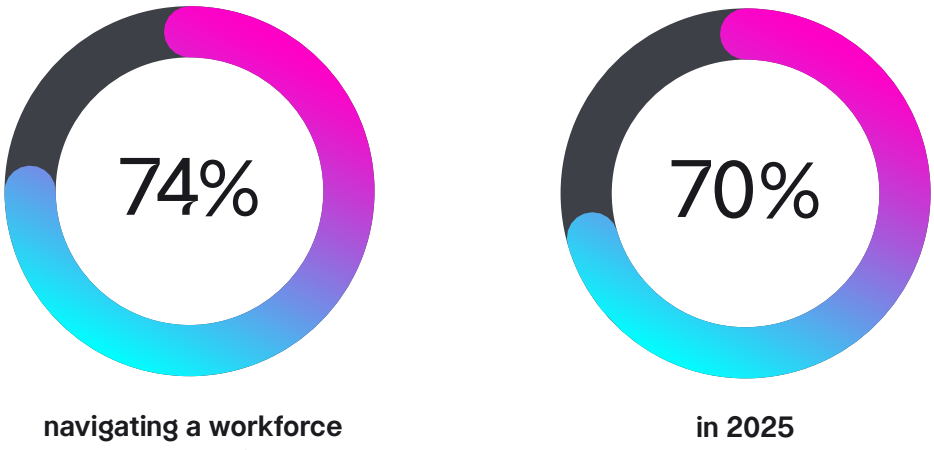
The manufacturing industry has been managing a workforce shortage for years. But managing it and solving it are different things. In 2026, three in four manufacturers — 74% — say their organization is still navigating a workforce shortage or skills gap. That number has risen every year this survey has tracked it.

Experienced workers are retiring faster than manufacturers can replace them, and as the skills a modern plant requires — increasingly digital, increasingly data-driven — outpacing what the available workforce brings. Often, positions stay open longer than they should.

The question for manufacturers is not whether the shortage exists. It's what to do about it.

Manufacturers navigating a workforce shortage or skills gap

Is your firm impacted by the current workforce skill shortage/skills gap?



The workforce shortage affects quality

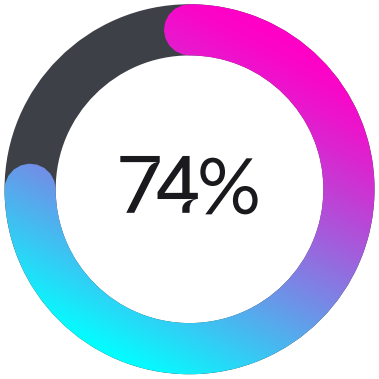
There are a few ways to think about the workforce shortage. One view is that it's a staffing problem, or an HR challenge that sits separately from quality operations. Another view is that it's a quality problem wearing an HR disguise.

Either way, among manufacturers navigating a skills gap, 86% say the shortage has negatively affected product or service quality.

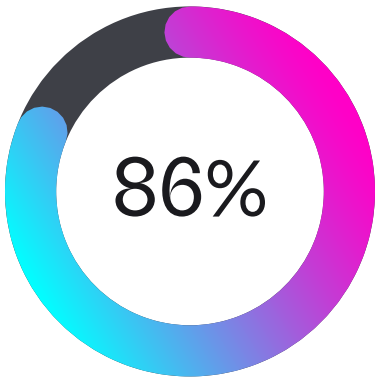
A workforce shortage that slows production is a cost that erodes quality and affects revenue, customer relationships, brand reputation and compliance standing all at once. The manufacturers treating this as a quality risk, not just a staffing challenge, are asking a different set of questions about how to respond.

The workforce shortage is a quality problem

Does this workforce shortage and skills gap have an impact on product or service quality?



impacted by a workforce shortage or skills gap



say product or service quality has suffered as a result

The shortages impact the millions manufacturers are already spending on quality

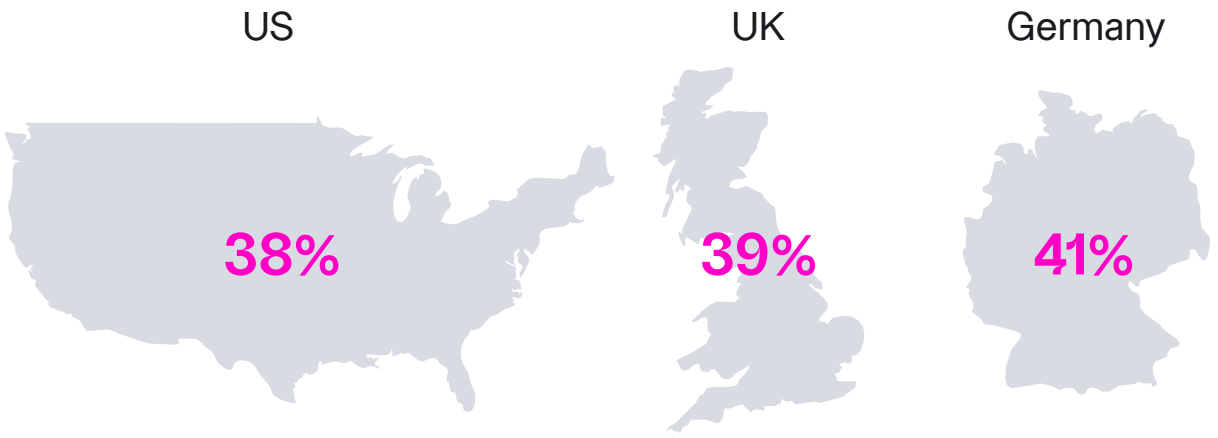
Before examining what the workforce shortage and tariff disruption mean for quality investment, it's worth anchoring what that investment already looks like. Quality is not a low-cost function.

Across the US, UK and Germany, not a single respondent reported spending less than $1M / £800K / €970K annually on quality programs and people. The largest concentration falls in the $10M–$49.99M range. A meaningful share are spending $50M or more.

These are established infrastructures of systems, people and processes built over years that are now impacted by fewer knowledgeable and experienced workers. Understanding the scale of that investment is what makes the pressure that follows so consequential. When two simultaneous external forces begin drawing from the same budget, the stakes are not abstract.

Annual spend on quality programs and people

Approximately, how much does your organization currently spend per year on quality programs and people?



$10-49.99M (USD)

£8-39.99M (GBP)

€9.7-48.49M (EUR)

Then came tariffs

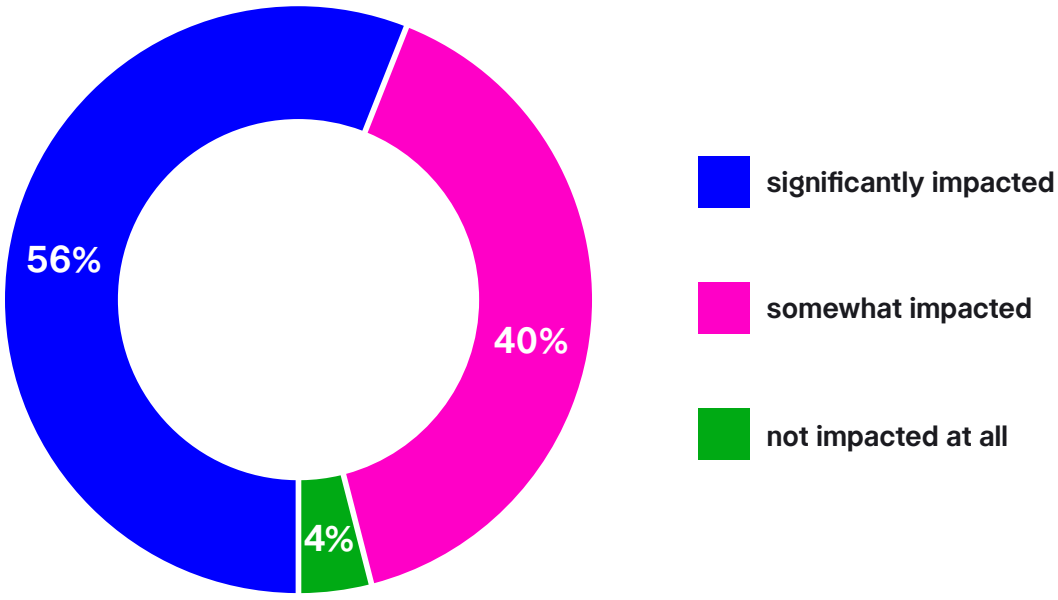
If the workforce shortage is a pressure that has been building gradually, trade tariffs arrived more suddenly. This is the first year the Pulse of Quality survey has tracked tariff impact as a dedicated topic, and 2026 is the year this moved from something manufacturers were watching to something they were managing.

96% of manufacturers report feeling the impact in some form (56% significantly / 40% somewhat). Only 4% say they've felt no impact at all. The tariffs are forcing tough decisions.

Do manufacturers cut quality spending to protect margins but risk quality slipping, or maintain and increase quality spending to protect against the downstream risks, but eat into already thin margins?

Tariff impact on manufacturers

To what extent, if at all, have trade tariffs or geopolitical issues impacted your business?



How to address the costs from tariffs?

When tariffs hit, manufacturers had to decide how to respond. But each response comes with tradeoffs.

68% have raised prices on their products — protecting margins in the short term while creating pressure on customer relationships and demand.

56% are reconsidering onshoring manufacturing operations, a move that can reduce tariff exposure but requires capital, time and a new set of supplier and workforce decisions.

And another 56% say they're finding new domestic suppliers, which introduces new quality unknowns into supply chains that were already under strain.

Only 11% have responded by curbing overall spend. For now, the dominant response is to adapt outward rather than pull back. But adapting outward, finding new suppliers and reconsidering manufacturing locations creates its own quality exposure, a thread that will matter when we reach the shop floor.

How manufacturers are responding to tariffs*

How have trade tariffs or geopolitical issues impacted your business?

68%
raised prices on products

56%
reconsidering onshoring manufacturing operations

56%
finding new domestic suppliers

11%
curbing overall spend

***Respondents selected all that applied.**

The top floor

Leaders are deciding whether to protect quality investment during a margin-compressed year or reduce it and accept the downstream risk. The data shows a split industry.

How are quality leaders deciding about their quality management investments, knowing that both increasing and cutting quality investments carry real consequences, and that workforce shortages and tariffs are actively making those consequences harder to predict?

Where a leader lands often comes down to one question: ***Is quality a cost to be managed, or a capability to be built?***

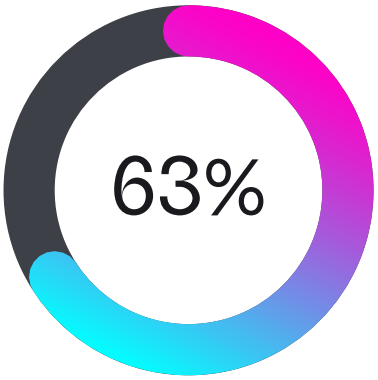
How leadership defines quality determines how it gets funded

Not every executive team looks at a margin-compressed year and makes the same call on quality investment. The difference often comes down to how quality is defined in the first place.

In this year's survey, 63% of manufacturers describe quality as a strategic, company-wide initiative and competitive differentiator. That figure has nearly doubled from 38% in 2025 — the largest single-year shift in three years of tracking.

But one in three still describe quality primarily as a compliance requirement. When margins shrink and budgets tighten, organizations that view quality as a cost center and those that view it as a capability make different decisions and face different consequences.

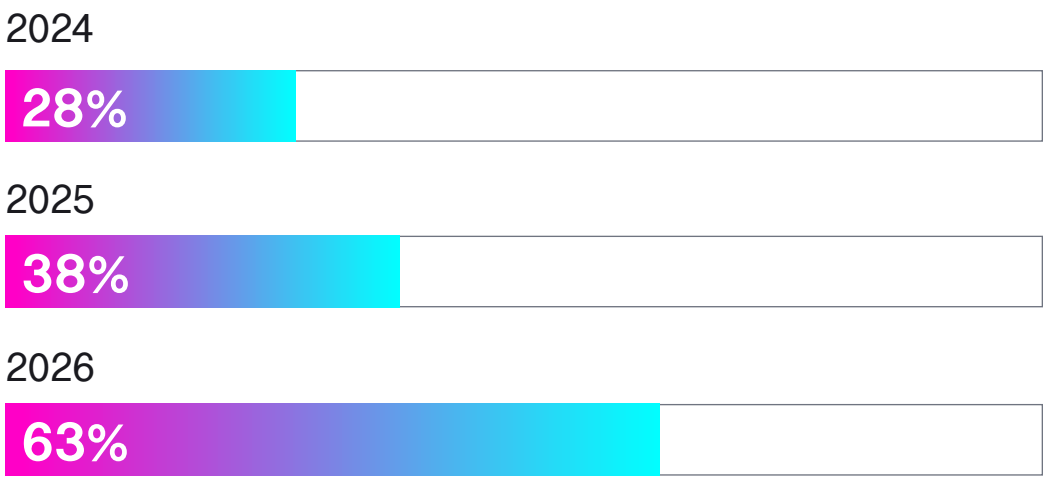
Quality as a strategic initiative — 2026



view quality as a strategic, company-wide initiative

Quality as a strategic initiative — three-year trend

What best describes how your organization views quality?



Compliance pressure is rising from both directions, even before spending decisions are made

The strategic elevation of quality is happening while the bar for quality is being raised by forces outside the organization. Regulatory requirements increased for 59% of manufacturers in the past twelve months. That adds documentation burden, audit readiness demands and process overhead costs that manufacturers must account for whether or not the organization chose them.

However, 65% say their internal quality standards have also increased independently of what regulators require. More organizations are raising the bar for themselves than having it raised for them. The shift toward viewing quality as a strategic initiative (Chart 6) and the rise of both internal and external compliance demands are happening at the same time. The floor is rising whether manufacturers choose to engage strategically or not. Those who do choose it are raising it themselves.

The decision about whether to cut or protect quality spending is being made while the requirements are actively increasing, which is important to remember when we look at investment drivers later in this section.

Compliance is rising from both directions

In the past 12 months, has your external compliance or regulatory burden increased, decreased or stayed the same?

59%

external compliance or regulatory burden has increased

In the past 12 months, have your internal compliance or quality standards increased, decreased or stayed the same?

65%

internal quality standards have increased independently

Recall rates are holding, but each one costs more than the last

About three in four manufacturers experienced a product recall in the past five years, which is relatively unchanged from 2024 (73%) and 2025 (75%).

The cost of each recall, however, is rising.

More than two-thirds of manufacturers who experienced a recall spent $10M or more to rectify their most recent recall. Around one in five spent $50M or more. A single recall can exceed an entire year of quality program spending — the same spending benchmarked in Chart 3 earlier.

For a leadership team weighing whether quality investment is worth protecting, the cost of a recall weighs heavily on the other side of the ledger. The top floor is beginning to focus less on whether quality programs cost money, and instead on whether a recall costs more.

What was the cost to rectify the most recent product recall?*

2 in 3

manufacturers spent $10M or more

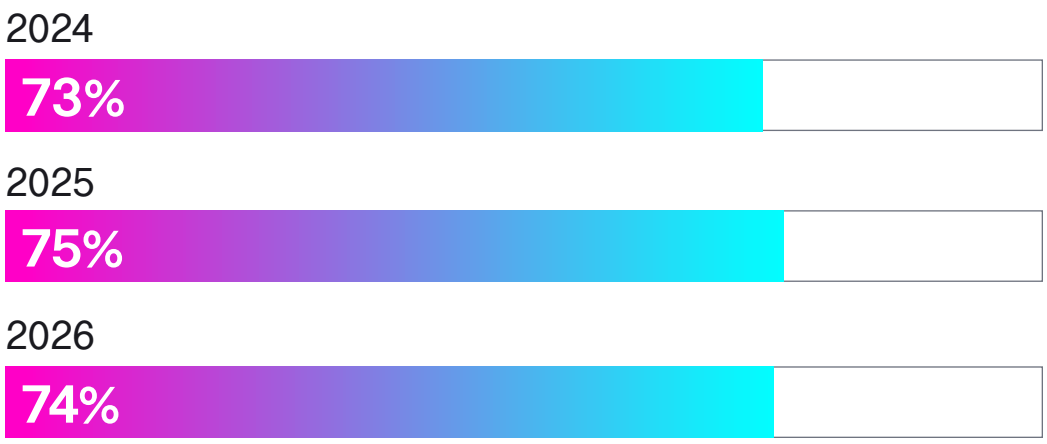
1 in 5

manufacturers spent $50M or more

***Among respondents who experienced a recall**

Recall rates are holding, but each one costs more than the last

Did your organization experience a product recall during the past five years?



Nearly half of recalls trace back to suppliers, but that half is still an internal problem

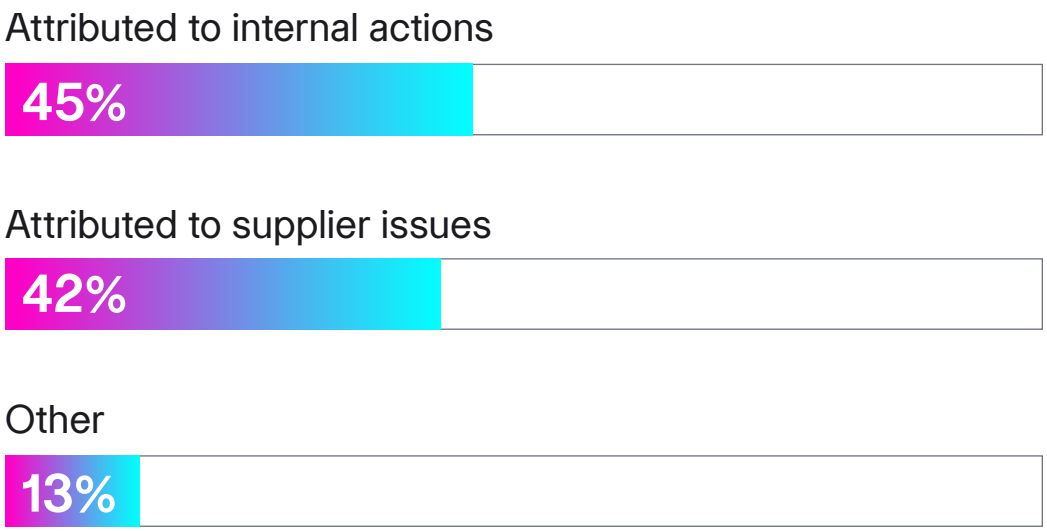
Among manufacturers who experienced a recall, attribution falls almost evenly with 45% attributing them to internal actions and 42% attributing to supplier issues.

The instinct is to treat the supplier half as external — harder to control and further from the organization's direct reach. But supplier qualification, incoming inspection, shared data and performance monitoring are all internal decisions. The organizations with the most control over supplier-related recall risk are the ones that built that control deliberately, through their own systems and processes.

Both sides of the recall attribution split point to the same answer, though. Better internal systems reduce both internal failures and the supplier failures that reach customers. It's worth holding that point as we turn to the question of where technology investment fits within the quality management process.

Where recalls come from*

Thinking of your most recent recalls, how much can you attribute to supplier issues vs. internal actions?



***Among respondents who experienced a recall**

Many leaders are leaning into AI

The share of manufacturers already deploying AI jumped to 47% in 2026, which is up from 33% in each of the two prior years. Another 46% plan to deploy within two years. In total, 90% are either already using AI or on a clear path to it.

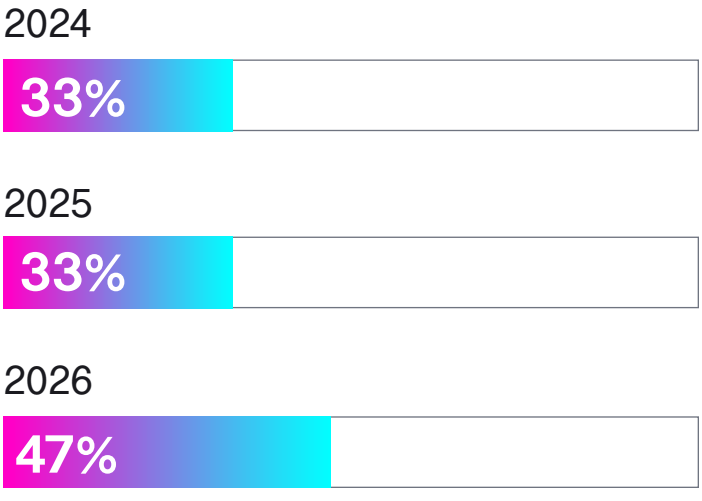
For many executive teams, AI represents a third option in the spending debate. It's not simply increasing or decreasing investment in existing programs, but redirecting spending toward tools that can address multiple pressures at once, such as the:

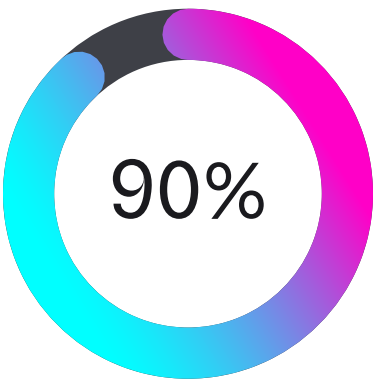
- Ongoing workforce shortage
- Documentation burden that rising compliance requirements create
- Defect detection and supplier monitoring gaps highlighted by recall data

AI could help with all of them.

AI adoption — three years of data

Which of the following best describes your organization with regards to using or planning on investing in AI for manufacturing?





already using AI or planning to within two years

Manufacturers invest in quality more for revenue and compliance than risk

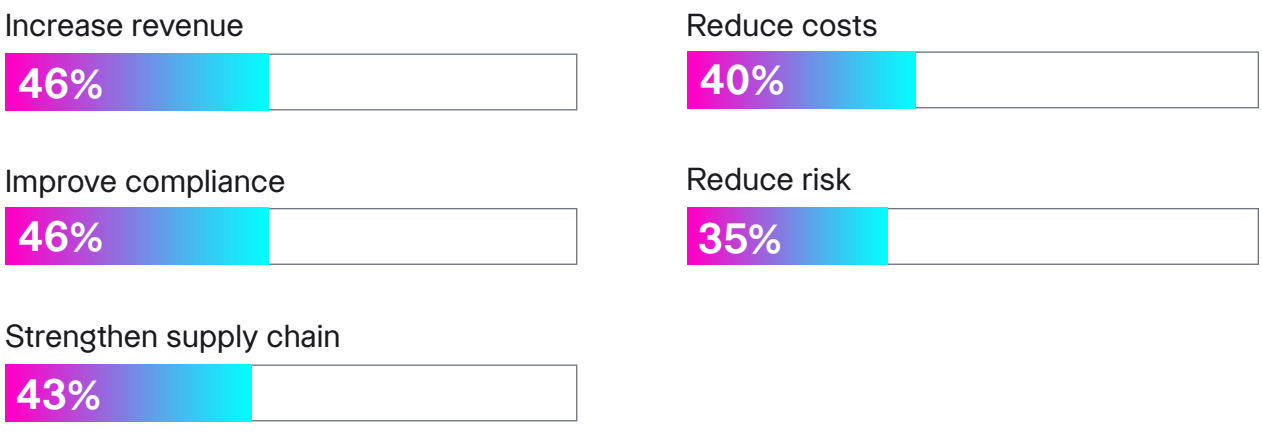
For quality leaders making the case to increase spending, the data suggests that framing quality as a growth enabler and a cost lever, rather than a liability hedge, is closer to how investment decisions are actually made. When we asked manufacturers to select the top three categories that drive their quality investments, they said:

- Revenue growth – 46%
- Compliance – 46%
- Strengthening the supply chain – 43%
- Reducing costs – 40%
- Risk reduction – 35%

The 46% citing compliance as a top investment driver reflects, in part, the rising external requirements described in Chart 7 (the organizations responding to increased regulatory burden are channeling that pressure into budget justification). The revenue framing, meanwhile, speaks directly to the 63% who now see quality as a strategic, competitive initiative rather than a compliance cost.

Top drivers of quality investment in 2026*

In 2026, what are your top business drivers for investing in quality initiatives, if any?



***Respondents selected up to three**

The industry is split — and both sides are moving in significant proportions

Given everything in this section (rising compliance demands, persistent recalls and tariff pressure), how is the industry actually moving on quality spending?

65% of manufacturers are increasing quality spend in 2026, and the majority of those increasing are doing so in the 21–30% range.

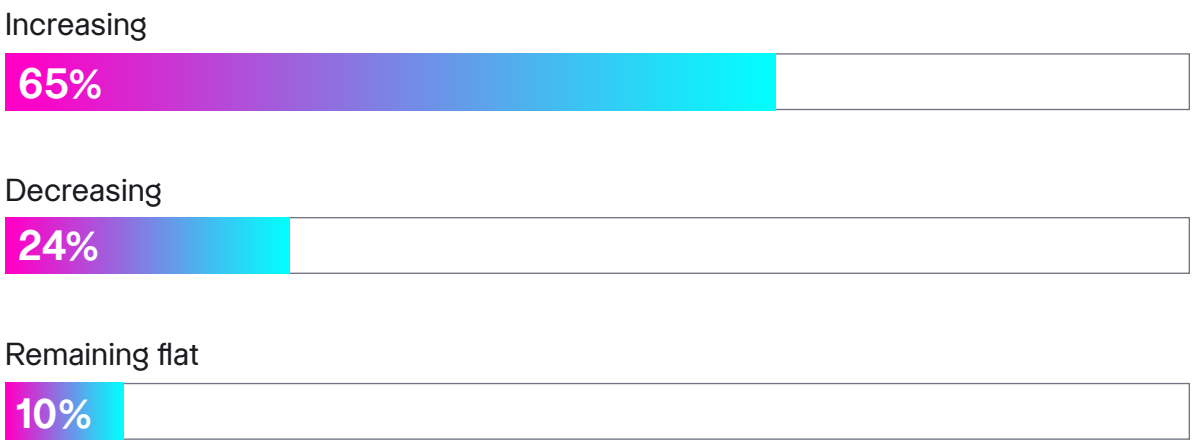
On the flip side, 24% are decreasing spend. However, when they cut, they cut in similar proportions as those increasing. Another 10% are holding flat.

Both the increase and decrease responses are rational given different positions, different margins and different reads on what the next twelve months require. The organizations increasing are betting that quality investment is a hedge against the risks described in this report. The organizations cutting are navigating the same pressures with less room to move. As we'll see on the shop floor, that decision has direct consequences for the people doing the work.

One thing to note from our survey is that Germany stands apart from the U.K. and the U.S. Only 50% of German manufacturers are increasing quality spend, compared to 71% in the U.S. and 68% in the U.K. That divergence reflects different market conditions and margin profiles.

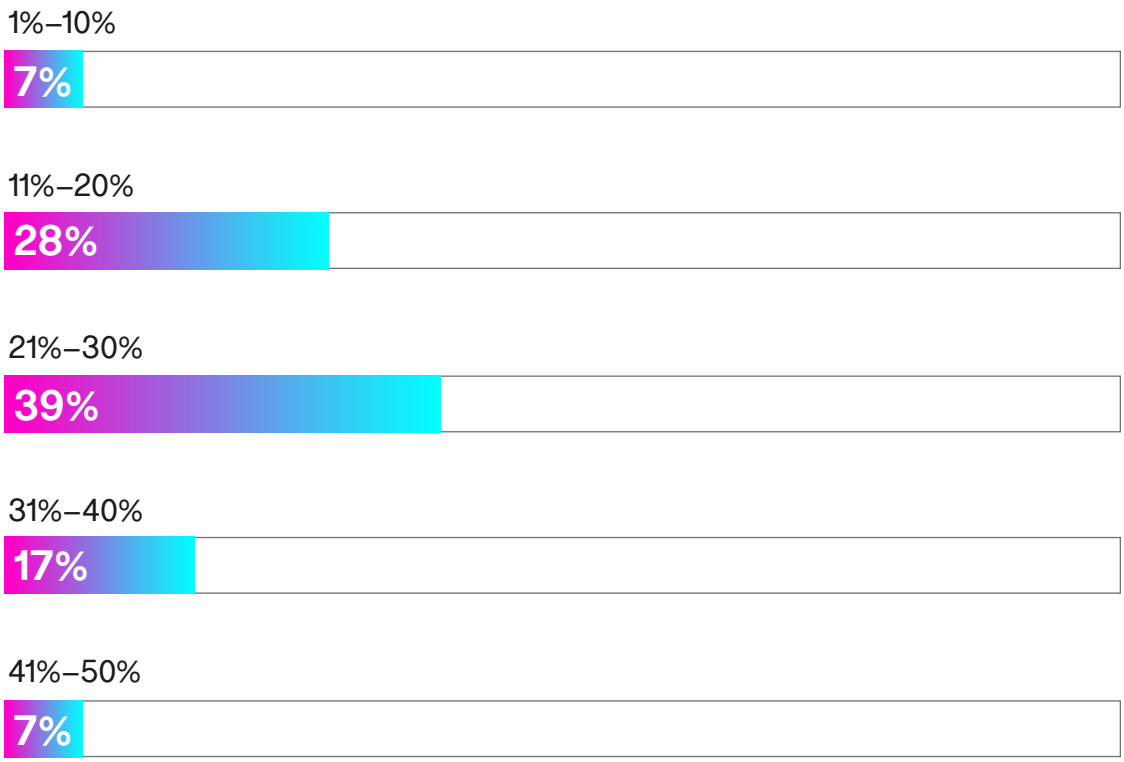
How quality spending is changing in 2026

How will your organization's total spend on quality programs and people change in 2026 compared to 2025?



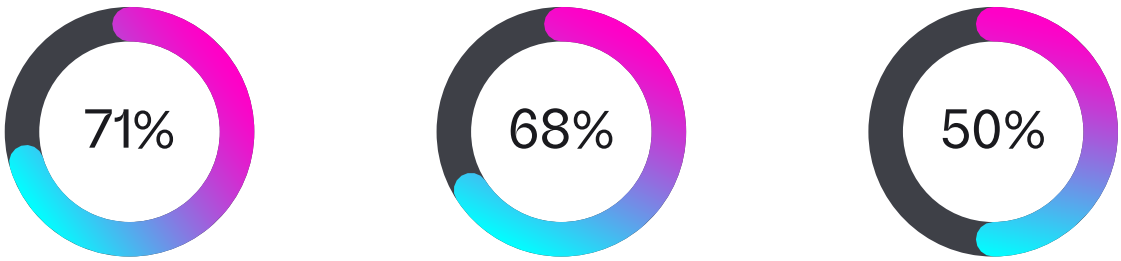
How quality spending is changing in 2026

By what percentage do you think your organization's total spend on quality programs and people will increase in 2026?*



***Among respondents increasing quality spend.**

Share increasing quality spend by country



The shop floor

The top floor made decisions, now the shop floor needs to work within those constraints, including the available tools and training. But the shop floor also adds context the top floor doesn't always see, such as what's actually breaking down, what's actually needed and who's actually being asked to find new suppliers.

Where quality data goes determines how quality is valued

Before looking at the tools and challenges on the shop floor, it helps to understand where the shop floor sits in the organizational picture. After all, quality KPIs often land in several different inboxes. The person reviewing those KPIs often comes at each with a different lens.

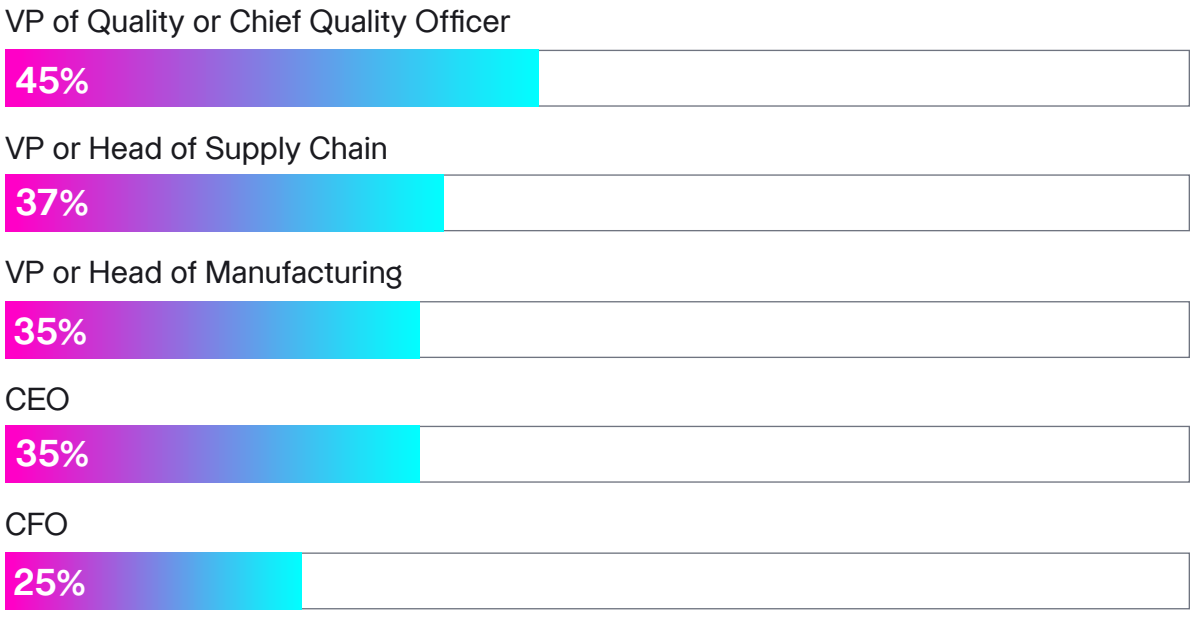
In our survey, respondents selected all of the options that applied, and the results were as follows:

- 45% of quality professionals report to a VP of Quality or Chief Quality Officer
- 37% report to the VP or Head of Supply Chain
- 35% report to the VP or Head of Manufacturing
- 35% report directly to the CEO
- 25% report to the CFO

When a quarter of quality teams report into financial leadership, it's no surprise that the top two investment drivers are revenue growth and compliance rather than risk reduction. Those are the areas a CFO tends to focus on in quality metrics conversations. The reporting line shapes what questions get asked about quality data, and whether quality gets treated as a growth lever or a line item.

Who reviews the quality KPIs?*

If you are responsible for reporting manufacturing quality and supply chain KPIs for your organization, to whom do you report them?



***Respondents selected all that applied**

The tools in the room reflect the investment decisions made above

Ask the shop floor how quality is managed and you'll get varying answers.

- 59% use an electronic Quality Management System (eQMS)
- 55% use SharePoint or office-type applications
- 51% use in-house developed software
- 25% still use paper

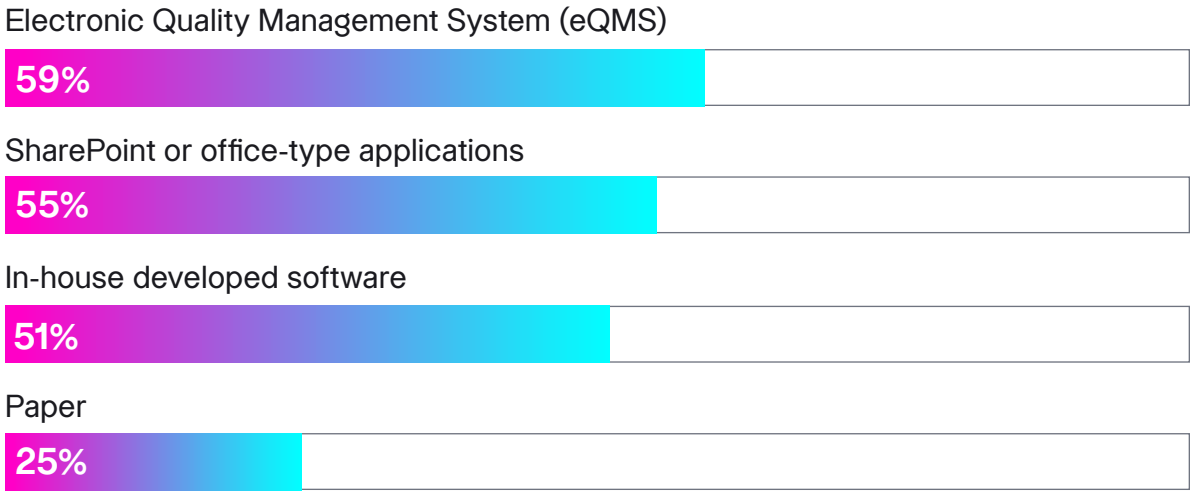
These aren't mutually exclusive. Many organizations use combinations of all four.

But the tool mix is a direct reflection of the investment decisions described in the previous section. For manufacturers navigating new domestic suppliers and reconsidering supply chains in response to tariffs, manual processes create their own compounding risks, such as more time tracking documents, more risk of version errors and more exposure at audit.

What's more, not every eQMS is built the same, which can compound the problems from the manual processes.

How quality processes are currently managed*

How, if at all, does your company currently manage its quality processes?



***Many organizations use more than one. Respondents selected all that applied.**

Four barriers stand between the shop floor and better quality outcomes

When quality professionals were asked what most stands in the way of achieving their organization's quality objectives, the answers fall into four categories at nearly identical rates.

- 26% cite inadequate tools or technology
- 25% cite insufficient training or team productivity
- 25% cite insufficient budget and investment
- 21% cite weak executive support

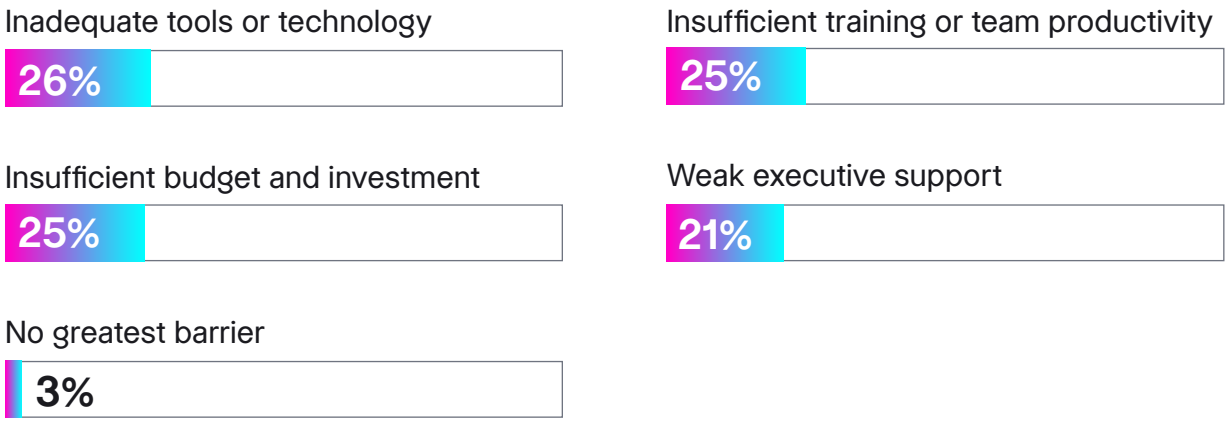
The organizations relying on paper and in-house software are very likely the same ones citing inadequate technology as their greatest barrier. The tools currently in use explain why the barrier exists.

Three of those four are, at root, the same thing: resources. Tools require budget. Training requires budget and attention. And budget requires budget.

The fourth (weak executive support) is the precondition for solving the other three. It's also worth noting that the 24% of organizations cutting quality spend (Chart 12) and the 25% citing budget as their greatest barrier are almost certainly overlapping populations. The spending decision made on the top floor is the budget problem experienced on the shop floor.

Greatest barriers to achieving quality objectives

What, if anything, is your greatest barrier to achieving your organization's quality objectives?



Not all AI investments are the same

When quality professionals say they want AI, they're often describing the operational gaps already mentioned in this report.

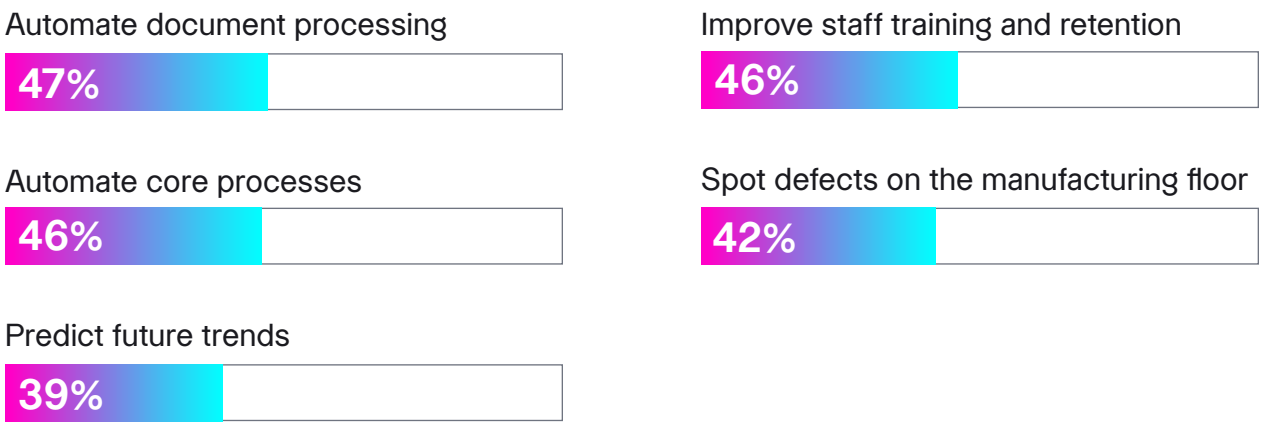
- 47% want AI to automate document processing (the burden that rising compliance requirements create)
- 46% want it to improve staff training and retention (the gap the workforce shortage opened)
- 46% want it to automate core processes
- 42% want it to spot defects on the manufacturing floor
- 39% want it to predict future trends

The good news is that the 14-point jump in AI adoption from 33% to 47% between 2025 and 2026 means these expectations are increasingly being acted on, not just wished for. Among those already using AI, the tools in active use include generative AI and large language models (51%), augmented intelligence for work instructions and decision support (47%), machine learning and computer vision (45%), agentic AI workflows (40%) and predictive analytics (39%).

For manufacturers looking to solve the burden of rising compliance or improving staff training and retention, AI offers the opportunity to invest in quality in a meaningful way.

What the shop floor needs AI to do*

What are the most important things you hope AI can accomplish for your organization?



***Respondents selected up to three.**

AI tools in active use today*

What types of AI tools are you using in your quality, safety or manufacturing operations now?

Generative AI or large language models

51%

Augmented intelligence

47%

Machine learning or computer vision

45%

Agentic AI workflows

40%

Predictive analytics

39%

***Among manufacturers currently using AI. Respondents selected all that applied.**

A note on three years of data

Taken together, three years of data reveal an industry in motion but not yet transformed.

Some things have changed sharply. AI adoption jumped from 33% to 47% in a single year, the largest one-year movement in any metric this survey tracks. And the share of manufacturers viewing quality as a strategic company-wide initiative nearly doubled in the same period, from 38% to 63%.

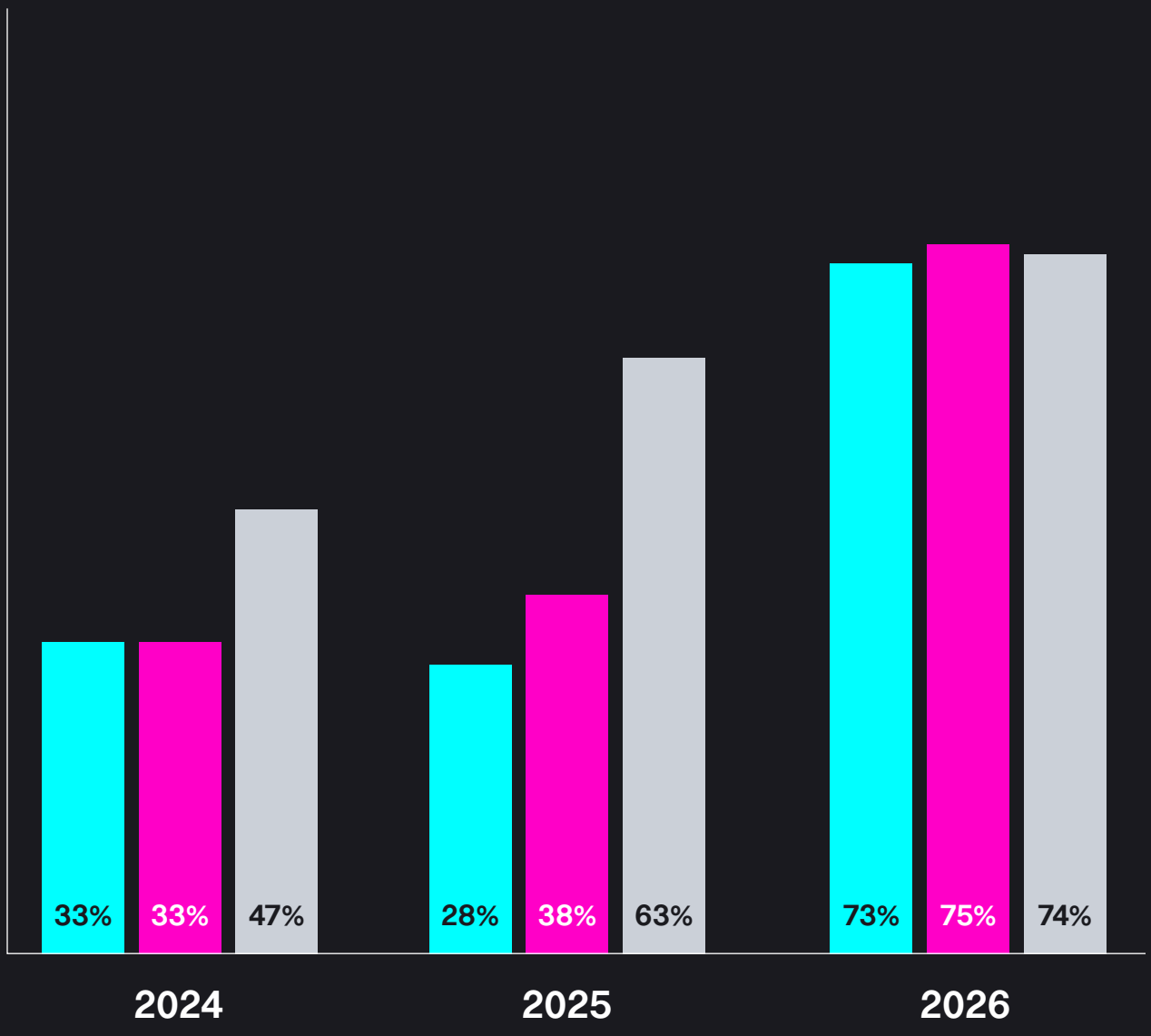
Both shifts suggest the question is no longer whether the industry takes quality seriously as a capability, but whether organizations can invest in it consistently enough and in the right areas to close the gap between intention and outcomes.

Meanwhile, some things have barely moved. Recall rates sat at 73%, 75% and 74% across three surveys, stubbornly flat despite significant investment. The workforce shortage has trended upward every year this survey has tracked it, from 70% in 2025 to 74% in 2026.

And some things are new entirely. Tariff disruption wasn't tracked in the prior two years. Now, 96% of manufacturers are managing it. New domestic suppliers are being sourced. Manufacturing locations are being reconsidered. Each of those decisions introduces quality risk that the shop floor is being asked to manage — with the tools and budgets the top floor provides.

If there's one thing that's remained consistent, it's that quality is moving toward the center of manufacturing organizations, not the edge. The workforce shortage and tariff disruption are accelerating that movement because the cost of quality failure is now too visible to ignore, and the investment required to prevent it is too large to defer without consequence. The organizations that treat quality as a capability, fund it accordingly and connect their shop floor to their top floor are the ones best positioned to navigate what comes next.

Three years at a glance



Which of the following best describes your organization with regards to using or planning on investing in AI for manufacturing?

AI already in use

What best describes how your organization views quality?

Quality viewed as a strategic initiative

Did your organization experience a product recall during the past five years?

Experienced a recall in the past five years

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property, and assets– for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency, and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.