



Unlocking stronger margins and cash flow through quality transformation

EBOOK

A framework for global manufacturers

Executive summary

Executives increasingly recognize the cost of poor quality (COPQ) not as a quality problem, but as unmanaged earnings leakage and operational volatility.

Over time, financial impact grows as variability leads to rework, uses capacity, and limits growth while delaying deliveries and increasing margin pressure.

This framework gives quality a direct line to earnings, with measurable margin impact within 6–12 months.

Implementation is self-funding and the COPQ reduction in year one covers the cost of the program.



Quality cost is an earnings problem

For global manufacturers, the cost of poor quality (COPQ) — scrap, rework, inspection, warranty claims and field failures — typically runs 5–15% of annual revenue. It sits inside cost of goods sold, rarely appears as a single line item and grows as the business scales.

Most organizations have invested in quality. The problem is those investments haven't reduced the cost. They've added controls without removing the underlying variability. And because that variability never connects directly to a financial outcome anyone is accountable for, it compounds.

Consider a manufacturer carrying \$5–6M per quarter in warranty and defect costs. That's \$20–24M annually — before accounting for the capacity consumed by rework, the inventory held as a buffer against delays or the margin lost through customer concessions. For a public company, this shows up in earnings per share. For any company, it shows up in cash flow.

It's an earnings problem hiding inside operations.

Cost of poor quality runs

5-15%

of annual revenue

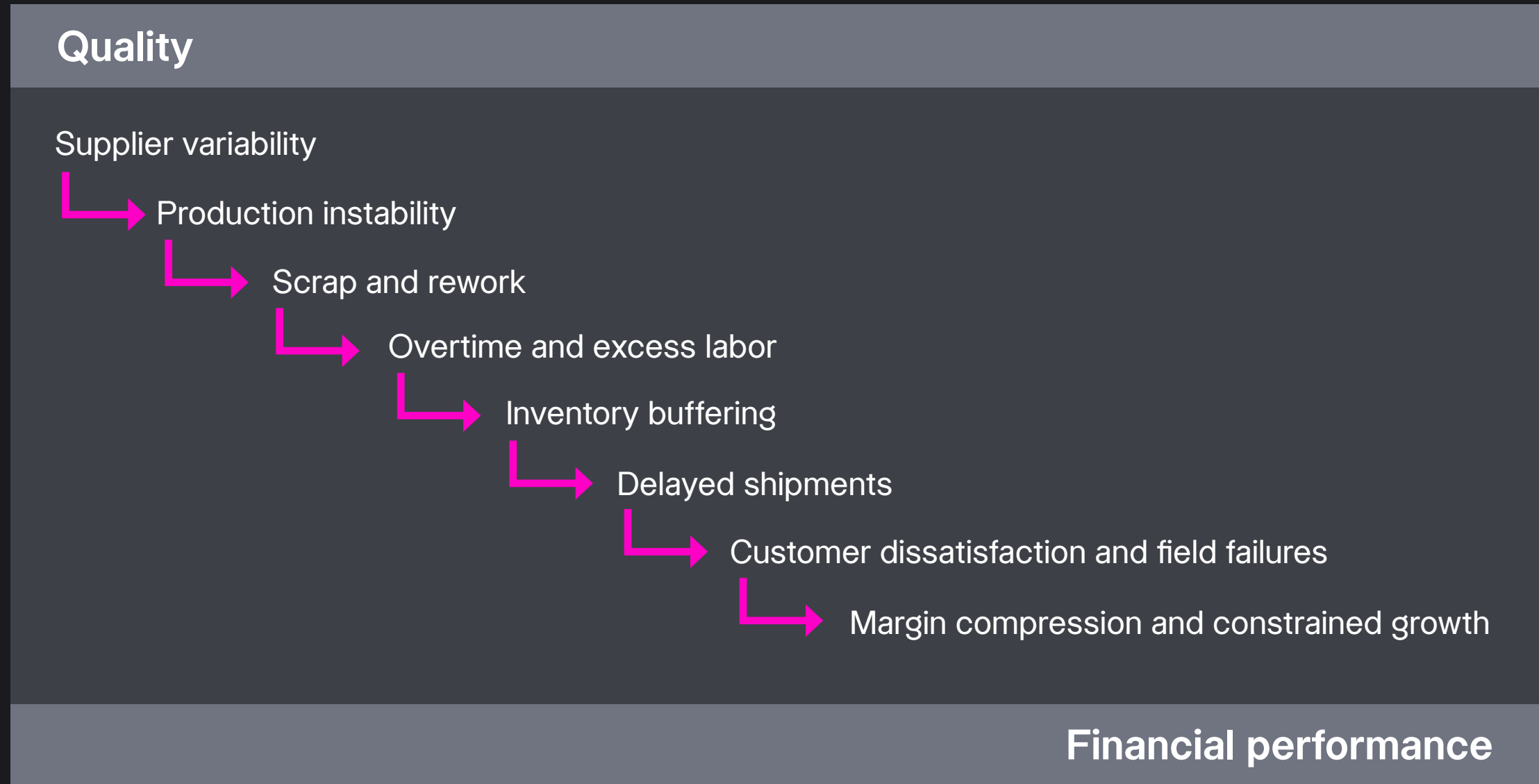


\$20-24M

Annually in warranty and defect cost

How poor quality flows through to your financial results

The connection between quality and financial performance follows a predictable sequence:



Reversing this chain has a direct impact on both margins and cash flow:

- Reducing scrap and rework lowers cost of goods sold and improves gross margin directly
- Improving first-pass yield reduces the cost per sellable unit — if you're currently making a unit for \$100 and selling it at a 33% margin, every warranty claim or rework cycle erodes that margin further; improving yield stops the bleed without raising price
- Faster throughput reduces working capital tied up in in-process inventory and improves cash conversion
- Fewer field failures reduce warranty reserves and the cash held against liability
- Better delivery performance reduces customer concessions and protects realized margin

Organizations that make this shift can see:

4+ pts

Gross margin improvement

10%+

COPQ reduction

4+ pts

First-pass yield improvement

8-10%

Throughput capacity
increase

20–30%

Reduction in customer
defect rates

3–5%

Incremental revenue
growth capacity

Five levers that connect quality to financial outcomes

Reducing COPQ at scale requires a system that connects quality processes, operational execution and financial results across every site, supplier relationship and product program. These are the five levers that drive measurable improvement:

	Quality lever	What it addresses	Potential impact*
01	Standardize global processes	Reduce variation and audit cost	37% reduction in audit findings; 20–40% reduction in audit effort
02	Connect quality systems	Eliminate rework and inefficiency	Elimination of 30+ systems across 60+ locations
03	Shift from detection to prevention	Reduce scrap, rework and field failures	3% scrap/rework; 5% field failure cost reduction
04	Integrate supplier quality	Reduce delays and external failures	15–20% reduction in supplier-related cycle time
05	Increase operational visibility	Improve throughput and decision-making	30% reduction in development timelines

* Based on research by Hobson & Company, conducted across twelve global manufacturers using Reliance quality management solutions.

Where does your organization sit today?

Most manufacturers have some processes in place, so they aren't starting from scratch. Understanding your current stage clarifies both the gap and the opportunity.

Stage	Characteristics	Business impact
Reactive quality	Fragmented systems	High operational variability
Site-level optimization	Localized standardization	Incremental gains
Connected quality operations	Integrated visibility	Reduced COPQ
Financially integrated quality control	Quality linked to EBITDA and margin	Protected margins



How to start

The organizations that achieve these outcomes do so because they treat this as a cross-functional transformation, which requires executive sponsorship, joint ownership and site-level champions.

We recommend a three-year rollout as follows:



Year 1

Visibility and standardization

Establish the COPQ baseline, connect fragmented systems and deliver initial cost reduction.



Year 2

Prevention and optimization

Integrate supplier quality, expand prevention workflows and improve first-pass yield.



Year 3

Predictive and financial integration

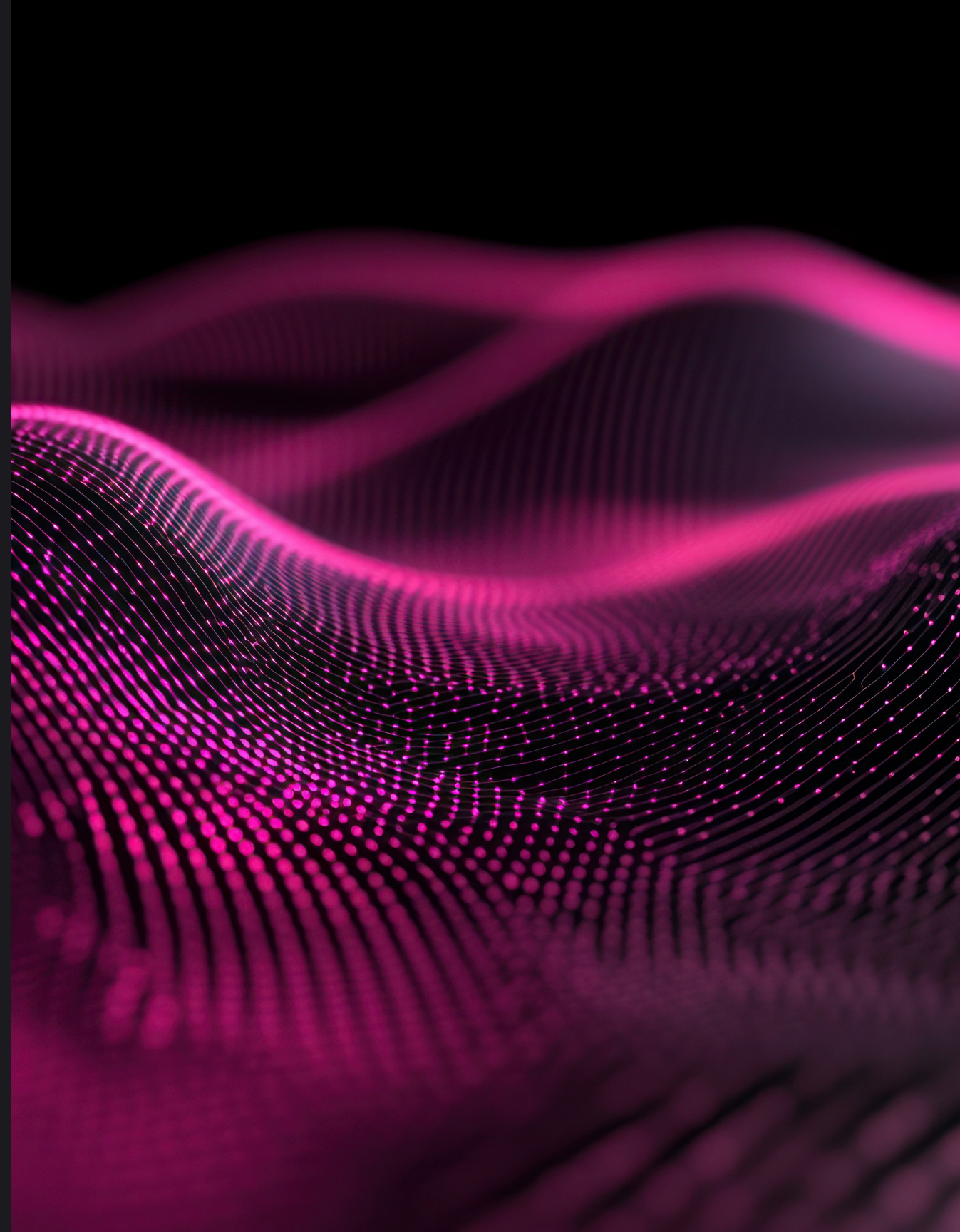
Tie operational metrics directly to EBITDA and margin forecasting and unlock throughput capacity.

How Octave Reliance helps

Greenlighting new spending when margins are tight is a hard conversation. That's why this program is designed to fund itself — COPQ reduction in year one covers the cost of implementation. The cost of acting is lower than the cost of another year of inaction.

We work with you to build the business case and model the impact before you commit to anything. Tell us about your operations and we'll show you where the margin and cash flow opportunity is.

Set up time to talk



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.

©2026 Intergraph Corporation and/or its affiliates. All rights reserved.

