



# Are You Measuring the Right KPIs for Quality Management?

How data-driven metrics transform your quality management approach.

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Created by Tekmon's Integrated Quality Management System (QMS)

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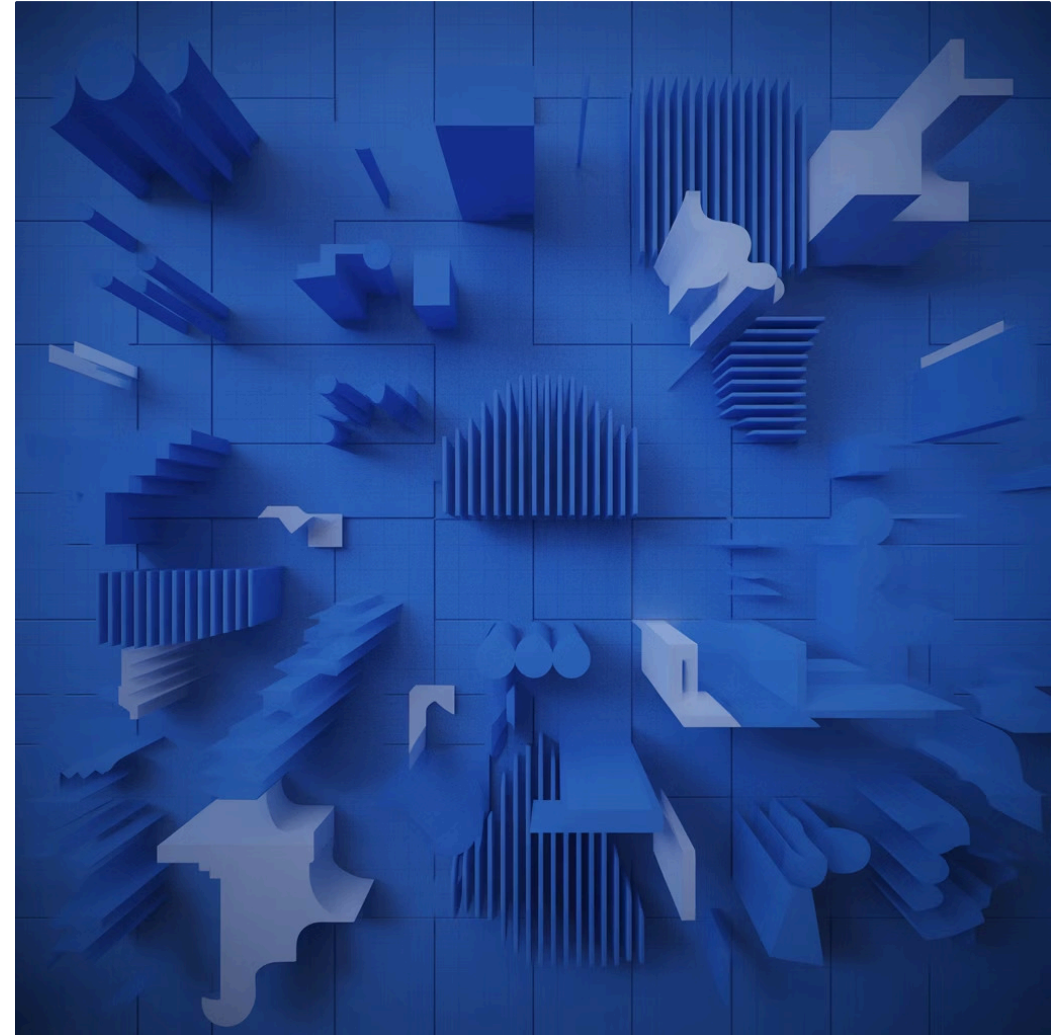
## Benefits & Next Steps

Transforming quality with Tekmon

# The Challenge

Success in modern industries depends on quality. Whether in manufacturing, food production, or regulated sectors, organizations face mounting pressures to maintain excellence while managing complexity.

The landscape of quality management has evolved dramatically, with stakeholders demanding transparency, regulators requiring meticulous documentation, and customers expecting perfection.



Today's quality managers must navigate an intricate web of requirements that span multiple domains. They must uphold strict standards that often vary by region and industry, ensure compliance with ever-changing regulations, eliminate inefficiencies that drain resources and profitability, and drive continuous improvement in an environment of constant change.

# Four Critical Quality Imperatives



## Uphold Strict Standards

Maintain consistency across all production lines and facilities, ensuring every product meets specifications regardless of location or shift.



## Ensure Compliance

Meet regulatory requirements and industry certifications while staying ahead of evolving standards and audit expectations.



## Eliminate Inefficiencies

Reduce waste and optimize resource allocation, turning quality management from a cost center into a profit driver.



## Drive Improvement

Foster a culture of continuous enhancement where every team member contributes to quality excellence.



# The Critical Question

How do you know if your QC and QA processes are truly effective?

# The Answer: Measuring the Right KPIs

The foundation of effective quality management starts with measuring the right KPIs. This isn't just about collecting data—it's about gaining actionable insights that drive meaningful change.

Without properly defined and tracked key performance indicators, organizations operate in a fog of uncertainty, making decisions based on intuition rather than evidence. The right Quality KPIs provide the compass your organization needs to navigate the complex terrain of modern quality management.



# Without the Right KPIs vs. With Quality KPIs

## Without the Right KPIs

- Critical insights go unnoticed until problems escalate
- Resources are wasted on ineffective processes
- Compliance risks rise, exposing organizations to penalties
- Improvement opportunities are missed
- Decision-making becomes reactive rather than proactive

## With Quality KPIs

- Gain complete visibility into operations
- Maintain control over quality outcomes
- Enable continuous improvement through data
- Predict and prevent issues before they occur
- Build confidence among stakeholders

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The right Quality KPIs transform raw data into strategic intelligence, helping you identify trends, benchmark performance, and make informed decisions that drive your organization forward.



# Tekmon's Role: Integrated Quality Management

Tekmon's Integrated Quality Management System represents a paradigm shift in how organizations approach quality control and assurance. Built on decades of industry expertise and cutting-edge technology, our platform eliminates the fragmentation that plagues traditional quality management approaches.

## **Automates KPI Tracking**

Eliminate manual data entry and reduce human error with intelligent automation that captures quality metrics in real-time across all operations.

## **Real-Time Dashboards**

Access instant visibility into performance metrics with customizable dashboards that deliver insights when and where you need them.

## **Ensures Compliance**

Stay audit-ready with built-in compliance frameworks for ISO standards, HACCP protocols, and industry-specific regulations.

## **Continuous Improvement**

Leverage advanced analytics and machine learning to identify improvement opportunities and track the impact of your initiatives.



# What Are Quality KPIs?

Key Performance Indicators (KPIs) are measurable values that assess the effectiveness of quality control and quality assurance processes. These metrics serve as the vital signs of your quality management system, providing objective evidence of performance and revealing areas that require attention or improvement.



## Product Quality

Measure the consistency and reliability of your outputs, tracking defects, returns, and customer-reported issues to ensure products meet specifications.



## Operational Efficiency

Evaluate how effectively your processes convert inputs to quality outputs, identifying bottlenecks and opportunities for optimization.



## Compliance

Monitor adherence to regulatory requirements, industry standards, and internal policies to minimize risk and maintain certifications.



## Customer Satisfaction

Track how well your quality efforts translate into customer experiences, measuring complaints, feedback, and loyalty metrics.

The most effective quality KPIs are SMART: Specific, Measurable, Achievable, Relevant, and Time-bound. They should align with your organization's strategic objectives while providing practical guidance for day-to-day operations.

# Why Quality KPIs Matter

The consequences of operating without strong quality KPIs extend far beyond mere inconvenience—they represent existential threats to organizational success. In today's competitive landscape, where margins are thin and customer loyalty is fleeting, quality issues can quickly compound into business-threatening crises.

## Inconsistent Quality

Products vary unpredictably in quality, eroding brand reputation and customer trust. Without KPIs to detect patterns, quality drifts slowly until a major failure occurs.

## Compliance Failures

Regulatory violations result in fines, production shutdowns, and potential legal action. The absence of tracking mechanisms leaves organizations vulnerable to audit findings.

## Missed Opportunities

Improvement initiatives lack direction and data-driven prioritization. Resources are allocated based on assumptions rather than evidence of impact.

## Customer Dissatisfaction

Quality issues damage relationships with customers, leading to returns, complaints, negative reviews, and ultimately lost business and market share.

Quality KPIs act as a compass guiding improvement and accountability, illuminating the path forward while revealing obstacles that might otherwise remain hidden until it's too late.

# Key Quality Control KPIs

Selecting the right quality control KPIs requires careful consideration of your organization's unique context, industry requirements, and strategic objectives. The following five KPIs represent the foundation of effective quality control, providing comprehensive visibility into production quality and operational performance.

## 1 Defect Rate

The percentage of products that fail to meet quality standards, providing a direct measure of production quality

## 2 First Pass Yield (FPY)

The proportion of units meeting specifications without requiring rework, indicating process efficiency

## 3 Customer Complaint Rate

The frequency of customer-reported quality issues, revealing how defects impact end users

## 4 Audit Compliance Rate

The percentage of audited items meeting standards, demonstrating adherence to requirements

## 5 Supplier Performance

A composite score evaluating supplier quality, delivery, and reliability across multiple dimensions

Each of these KPIs tells part of your quality story. Together, they create a comprehensive picture of quality control effectiveness that drives informed decision-making and continuous improvement.

# KPI #1: Defect Rate

**Definition:** The percentage of products that fail to meet established quality standards during production or inspection. This fundamental metric quantifies quality performance and serves as a leading indicator of process stability.

**Formula:**

$$\text{Defect Rate} = \frac{\text{Defective Units}}{\text{Total Units Produced}} \times 100$$

Organizations typically track defect rates by product line, shift, operator, and production equipment to identify patterns and root causes. Understanding where defects originate enables targeted interventions that deliver maximum improvement with minimum resource investment.

## Industry Benchmarks

Performance	Defect Rate
Excellent	< 0.1%
Good	0.1–0.5%
Average	0.5–1%
Poor	> 1%

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## How Tekmon Helps

Tekmon automates defect tracking across all inspection points, eliminating manual logging and ensuring no defects slip through documentation gaps. Advanced trend analysis reports identify patterns invisible in day-to-day operations—revealing correlations between defects and variables like time of day, operator, supplier batch, or equipment calibration cycles.

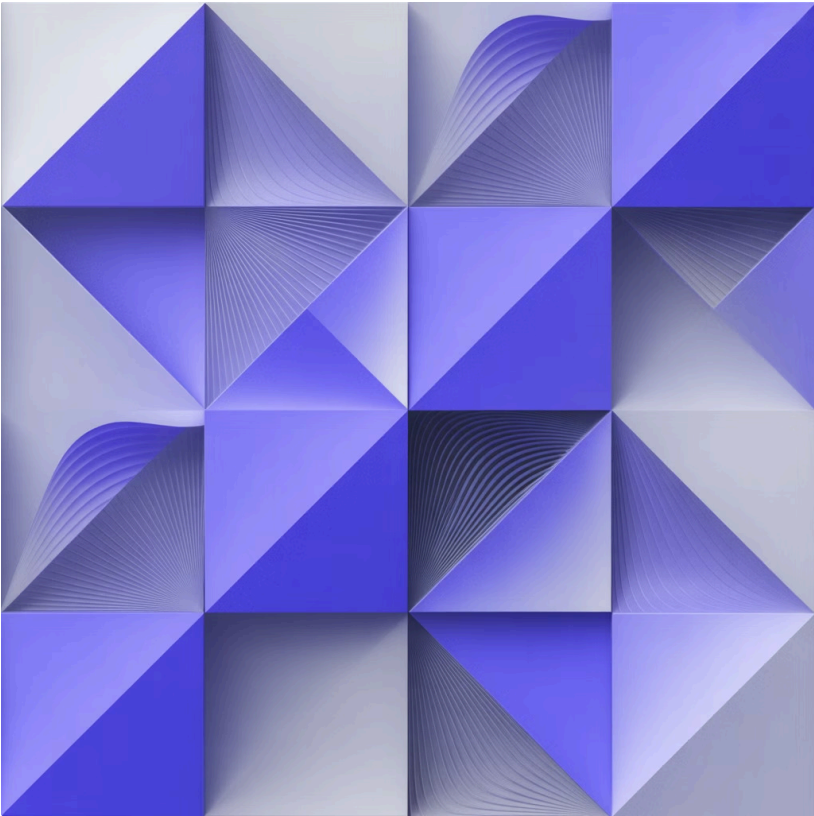
# KPI #2: First Pass Yield (FPY)

**Definition:** The percentage of units that meet quality standards on the first attempt, without requiring rework, repair, or reprocessing. First Pass Yield represents one of the most powerful quality and efficiency metrics because it directly correlates with production costs, cycle times, and customer delivery performance.

**Formula:**

$$FPY = \frac{\text{Good Units}}{\text{Total Units Processed}} \times 100$$

FPY differs from defect rate by focusing specifically on first-time quality rather than final outcomes. High FPY indicates stable, capable processes, while low FPY signals systemic issues requiring root cause analysis and corrective action.



Performance Level	FPY %
Excellent	99.5%
Good	98.5%
Average	96.5%
Poor	93%

## Real-Time Alerts

Tekmon's CAPA module triggers immediate alerts when FPY drops below thresholds, enabling rapid response before issues escalate.

## Automated Workflows

Predefined workflows guide teams through investigation and corrective action, ensuring consistent, thorough responses to FPY issues.

## Root Cause Analysis

Integrated RCA tools help teams identify underlying causes of low FPY, from process variability to training gaps to equipment maintenance needs.


# KPI #3: Customer Complaint Rate

**Definition:** The number of quality-related complaints received per 10,000 units sold or shipped to customers. This metric serves as the ultimate quality indicator because it measures what matters most—customer experience.

$$\text{Customer Complaint Rate} = \frac{\text{Number of Complaints}}{\text{Units Sold}} \times 10,000$$


While internal quality metrics reveal production performance, customer complaint rate shows whether your quality standards align with customer expectations and whether defects escape your inspection processes. Leading organizations maintain detailed complaint taxonomies that enable trend analysis by product, customer segment, defect type, and root cause.

Performance Level	Complaints per 10,000 Units
Excellent	0.5
Good	3
Average	7.5
Poor	12




### Intelligent Prioritization

Automatically categorizes and prioritizes complaints based on severity, frequency, and business impact



### Corrective Actions

Link complaints directly to CAPA workflows, tracking actions from initial investigation through verification



### Advanced Analytics

Identify patterns across complaints to uncover systemic issues and measure effectiveness of improvements

# KPI #4: Audit Compliance Rate

**Definition:** The percentage of audited items, processes, or criteria that meet established standards during internal audits, external audits, or regulatory inspections. This metric quantifies your organization's adherence to quality management system requirements, regulatory obligations, and internal policies.

**Formula:**

$$\text{Audit Compliance Rate} = \frac{\text{Compliant Items}}{\text{Total Audited Items}} \times 100$$

## Performance Benchmarks

Performance	Compliance Rate
Excellent	> 98%
Good	95–98%
Average	90–95%
Poor	< 90%

High compliance rates indicate mature, well-controlled processes, while low rates reveal gaps that require corrective action before they result in regulatory findings or certification issues. Maintaining excellent compliance requires systematic approaches that go beyond periodic audits.



### Digital Audits

Replace paper-based audits with digital checklists that ensure consistency, completeness, and immediate data capture



### Mobile Collection

Enable auditors to collect data on smartphones or tablets, with photo evidence and GPS timestamps



### Automated Reports

Generate comprehensive audit reports instantly, with trend analysis and compliance scoring



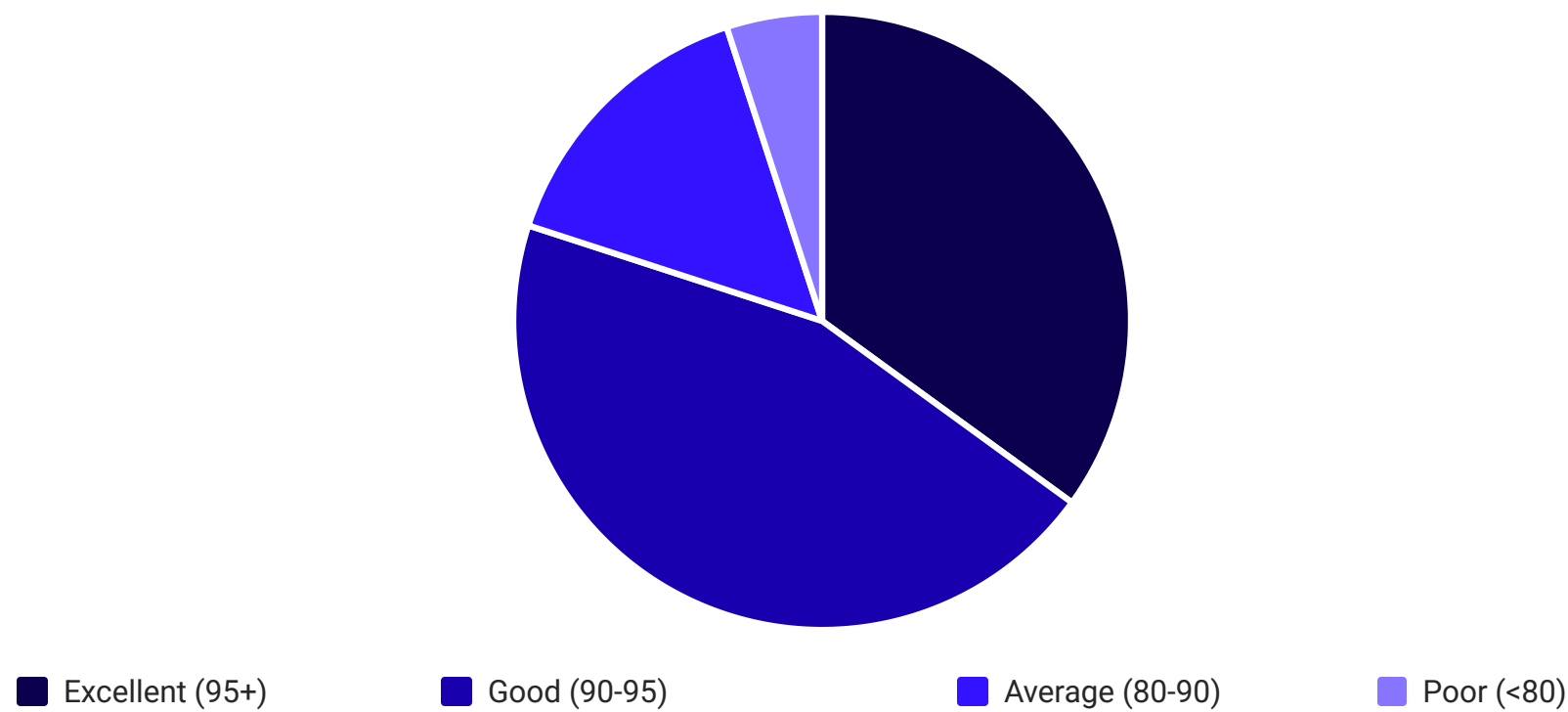
# KPI #5: Supplier Performance

**Definition:** A comprehensive weighted score evaluating supplier performance across multiple critical criteria including defect rate, on-time delivery, quantity accuracy, documentation quality, and SLA compliance. Supplier performance metrics extend your quality management upstream, recognizing that incoming material quality fundamentally determines final product quality.

**Formula:** Weighted average calculated across key performance criteria:

- Quality/Defect Rate: 40%
- On-Time Delivery: 30%
- Documentation Accuracy: 15%
- SLA Compliance: 15%

**Example:** If a supplier has Quality Score: 85, On-Time Delivery: 95, Documentation: 90, SLA Compliance: 88, then: Supplier Score =  $(85 \times 0.40) + (95 \times 0.30) + (90 \times 0.15) + (88 \times 0.15) = 34 + 28.5 + 13.5 + 13.2 = 89.2$



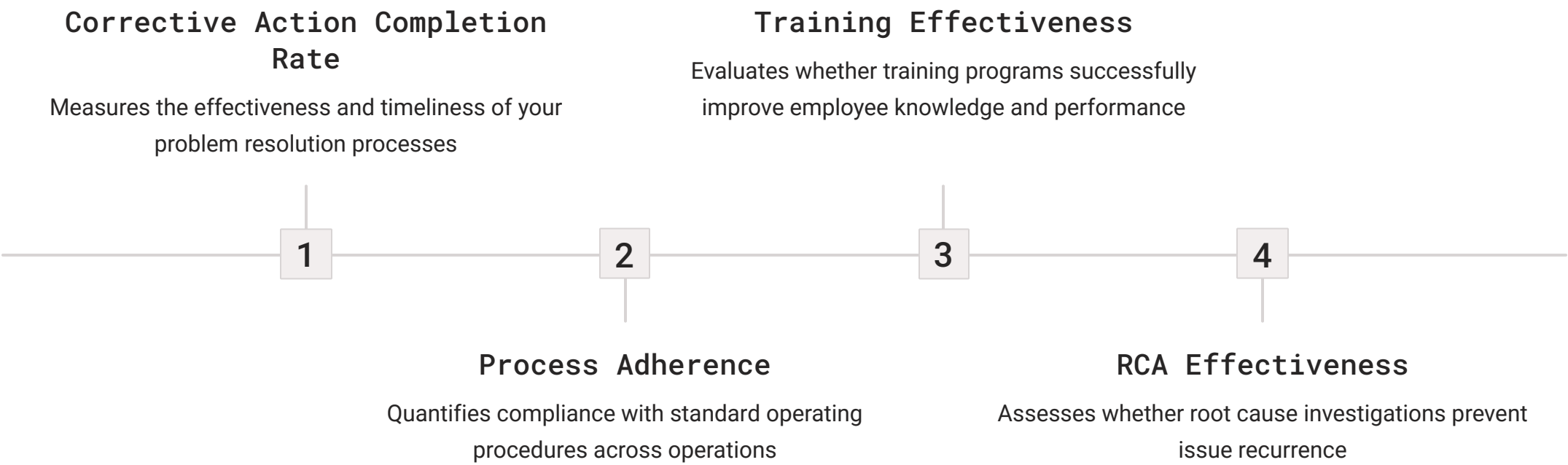
The distribution above represents a healthy supplier base, with the majority performing at good or excellent levels. Organizations should actively manage their supplier mix toward this profile through development programs, performance-based awards, and strategic sourcing decisions.

<b>Automated Assessments</b> Calculate supplier scores automatically based on incoming inspection results, delivery performance, and documentation compliance	<b>SLA Monitoring</b> Track service level agreements in real-time, with alerts when suppliers approach or breach commitments	<b>Improvement Tracking</b> Document supplier corrective actions and track improvement over time, creating collaborative partnerships
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# Quality Assurance KPIs

While quality control KPIs focus primarily on production outcomes—detecting and measuring defects in products—quality assurance KPIs address the underlying systems, processes, and capabilities that prevent defects from occurring in the first place. QA metrics emphasize long-term improvement, process maturity, and organizational learning rather than short-term production results.

The distinction between QC and QA metrics reflects a fundamental quality philosophy: QC asks "Did we make it right?" while QA asks "Are we capable of making it right consistently?"



Organizations that excel in QA metrics typically outperform peers in QC metrics as well—not because they're better at finding defects, but because they're better at preventing them. This upstream focus creates sustainable competitive advantages that compound over time.

# KPI #6-9: Quality Assurance Metrics Deep Dive

1	<p><b>Corrective Action Completion Rate</b></p> <p><b>Definition:</b> The percentage of corrective actions (CAPAs) completed within their target timeframe. Reveals how effectively your organization responds to identified quality issues.</p> <p><b>Benchmark:</b> Excellent &gt;98%, Good 90-98%, Average 80-90%, Poor &lt;80%</p> <p><b>Tekmon Solution:</b> Comprehensive tracking, proactive alerts, and workflow templates that accelerate resolution while ensuring thorough execution.</p>
2	<p><b>Process Adherence</b></p> <p><b>Definition:</b> The percentage of times that standard operating procedures (SOPs) and work instructions are followed correctly during quality-critical activities.</p> <p><b>Benchmark:</b> Excellent 100%, Good 98-99%, Average 95-98%, Poor &lt;95%</p> <p><b>Tekmon Solution:</b> No-code workflows, digital forms, and smart reminders ensure procedures are clear, accessible, and consistently followed.</p>
3	<p><b>Training Effectiveness</b></p> <p><b>Definition:</b> The measurable improvement in employee knowledge, skills, or performance following training interventions, tracked through assessments and on-the-job evaluations.</p> <p><b>Benchmark:</b> Excellent &gt;95%, Good 85-95%, Average 75-85%, Poor &lt;75%</p> <p><b>Tekmon Solution:</b> Centralized training library, automated records management, and competency mapping ensure the right training reaches the right people.</p>
4	<p><b>RCA Effectiveness</b></p> <p><b>Definition:</b> The percentage of quality issues successfully resolved without recurrence after root cause analysis and corrective action implementation.</p> <p><b>Benchmark:</b> Excellent &gt;95%, Good 85-95%, Average 75-85%, Poor &lt;75%</p> <p><b>Tekmon Solution:</b> Structured RCA templates, trend analysis across incidents, complete documentation, and proactive prevention through predictive analytics.</p>

# KPI Benchmark Summary

This comprehensive benchmark table consolidates performance standards across all nine critical quality KPIs. These benchmarks represent industry-validated performance levels drawn from thousands of implementations across manufacturing, food production, pharmaceutical, and other regulated industries.

KPI	Excellent	Good	Average	Poor	Category
Defect Rate	<0.1%	0.1–0.5%	0.5–1%	>1%	QC
First Pass Yield	>99.5%	98–99.5%	95–98%	<95%	QC
Customer Complaints (per 10k)	<1	1–5	5–10	>10	QC
Audit Compliance	100%	98–99%	95–98%	<95%	QC
Supplier Performance	>95	90–95	80–90	<80	QC
Corrective Action Completion	>98%	90–98%	80–90%	<80%	QA
Process Adherence	100%	98–99%	95–98%	<95%	QA
Training Effectiveness	>95%	85–95%	75–85%	<75%	QA
RCA Effectiveness	>95%	85–95%	75–85%	<75%	QA

Organizations should resist the temptation to focus exclusively on areas of weakness. While improving poor-performing KPIs delivers immediate value, maintaining excellent performance in current strengths prevents backsliding and preserves competitive advantages.

# Take Control of Your Quality KPIs with Tekmon Measure. Improve. Excel.

The journey to quality excellence begins with a single step: measuring what matters. With Tekmon's Integrated Quality Management System, you gain the visibility, control, and intelligence needed to transform quality from a cost center into a competitive advantage.

## Automated Tracking

Eliminate manual data entry and ensure accuracy with intelligent automation across all quality processes

## Real-Time Intelligence

Access performance insights instantly through customizable dashboards and automated reports

## Compliance Confidence

Stay audit-ready with built-in frameworks for ISO, HACCP, and industry-specific regulations

Thousands of quality professionals across manufacturing, food production, and regulated industries trust Tekmon to power their quality management systems. Join them in experiencing the difference that integrated, intelligent quality management makes.

**Ready to transform your quality management approach?**

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