Improving Supplier Engagement in Performance Data Reporting

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Master in Engineering Management
Graduate Project EXPO, May 2026

Abstract

Improving supplier performance reporting in the aerospace industry required addressing low supplier participation, incomplete data submissions, delayed reporting, and inconsistent data quality, all of which reduced operational visibility and decision-making effectiveness. The Plan-Do-Check-Act (PDCA) methodology was applied to standardize the reporting process through the implementation of a RACI matrix, improved supplier communication, standardized reporting templates, and KPI monitoring. Results showed significant performance improvements: supplier participation increased from 50% to 78%, data completeness from 62% to 90%, data accuracy from 70% to 93%, and on-time submission from 58% to 86%. Structured continuous improvement strengthened supplier accountability, reporting reliability, and overall operational efficiency.

Introduction

Supplier performance management is critical in the aerospace industry to ensure supply chain efficiency and reliability. However, the lack of a standardized reporting process has resulted in approximately 49% of expected supplier performance data being unavailable due to low supplier participation. This project aims to implement a standardized reporting process supported by a RACI matrix to improve data quality, completeness, and timeliness, enhancing operational visibility and data-driven decision-making.

Literature Review

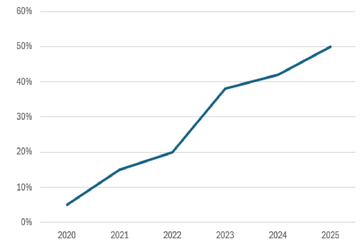
Research indicates that standardized reporting processes, supplier engagement strategies, and frameworks such as RACI and PDCA improve data consistency, accountability, and operational visibility in supply chain management. These practices support stronger supplier collaboration and continuous improvement through more reliable performance data.

Methodology

This project applied the PDCA to evaluate and improve supplier performance reporting. Historical performance data was analyzed to identify recurring reporting gaps and operational inefficiencies. Improvement actions included process mapping, root cause analysis, stakeholder role clarification through a RACI matrix, standardized reporting tools, and enhanced supplier communication. Performance outcomes were evaluated through baseline and post-implementation KPI comparisons.

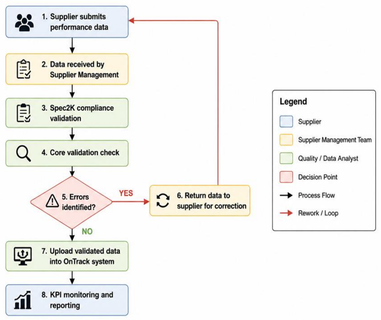
Methodology

Figure 1. Historical Supplier Participation Trend (2020–2025)



Historical supplier participation remained consistently low over time, highlighting a persistent engagement gap and establishing the baseline condition that justified the implementation of this improvement initiative.

Figure 2. Current Supplier Reporting Process



The process map illustrates the existing supplier reporting workflow and highlights inefficiencies, delays, and communication gaps that contributed to inconsistent supplier performance reporting.

Table 1. Stakeholder Roles and Responsibilities (RACI Matrix)

Process Activity	Supplier	Supplier Management Team	Quality / Data Analyst
1. Supplier submits performance data	R/A	I	I
2. Data received by Supplier Management	I	R/A	I
3. Spec2K compliance validation	I	C	R/A
4. Core validation check	I	C	R/A
5. Error identification decision	I	C	R/A
6. Return data to supplier for correction	R	A	C
7. Upload validated data into OnTrack system	I	C	R/A
8. KPI monitoring and reporting	I	C	R/A

Legend:

R (Responsible): Performs the task
A (Accountable): Owns the outcome
C (Consulted): Provides input or expertise
I (Informed): Kept updated on progress

The RACI matrix defines stakeholder responsibilities within the supplier reporting process, improving accountability, role clarity, and execution consistency across the improvement initiative.

Results

The implementation of the PDCA methodology produced significant improvements in supplier reporting performance, operational efficiency, and governance. Standardized workflows and clearer stakeholder accountability improved supplier participation, enhanced reporting consistency, and reduced reporting defects. The performance comparison demonstrates the effectiveness of structured process improvement in strengthening supplier reporting reliability.

Table 2. Comparison of Baseline and Post-Implementation Performance Metrics

KPI Evaluated	Baseline Performance	Target Measure	Evaluation Method	Performance Objective
Supplier Participation Rate	50%	90%	KPI comparison and trend analysis	Improve supplier engagement
Data Completeness	62%	90%	Variance analysis	Improve reporting completeness
Data Accuracy Rate	70%	90%	Validation performance review	Improve data reliability
On-Time Submission Rate	58%	90%	Trend analysis	Reduce reporting delays
Error Rate	18%	≤10%	Defect rate comparison	Reduce reporting defects
Process Compliance	68%	90%	Compliance monitoring	Strengthen process control
Manual Effort	100% manual	≤65% manual	Workload analysis	Improve operational efficiency
Escalation Resolution Time	12 days	≤5 days	Resolution time review	Improve responsiveness
Workflow Standardization Coverage	40%	100%	Governance assessment	Sustain process consistency
KPI Monitoring Coverage	30%	90%	Dashboard monitoring review	Enhance performance visibility

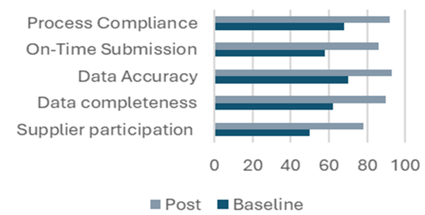
The performance evaluation framework identified key baseline gaps and established measurable targets to assess process improvement impact.

Table 3. Performance Evaluation Framework

Metric	Baseline	Target	Post-Implementation	Improvement
Supplier Participation Rate	50%	90%	90%	40%
Data Completeness	62%	90%	90%	28%
Data Accuracy Rate	70%	90%	93%	23%
On-Time Submission Rate	58%	90%	86%	28%
Error Rate	18%	≤10%	6%	-66%
Process Compliance	68%	90%	92%	24%
Manual Effort	100%	≤65%	65%	Reduced by 35%
Escalation Resolution Time	12 days	≤5 days	4 days	-67%
Workflow Standardization Coverage	40%	100%	100%	60%
KPI Monitoring Coverage	30%	90%	95%	65%

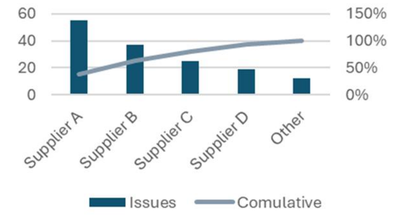
This performance comparison demonstrates measurable improvements in supplier participation, reporting quality, operational efficiency, and compliance following implementation of the PDCA methodology.

Figure 3. Supplier Performance Before and After Implementation



The bar chart visually demonstrates the significant performance gains achieved across key supplier reporting metrics following implementation of the improvement initiative.

Figure 4. Pareto Analysis of Supplier Reporting Issues



The Pareto analysis identifies the most critical supplier reporting issues, enabling focused improvement efforts on the highest-impact root causes.

Table 4. Business Impact

Operational Dimension	Key Outcomes Achieved
Supplier Engagement	Supplier Participation Rate increased from 50% to 78%
Data Quality	Data Completeness increased from 62% to 90%, and Data Accuracy improved from 70% to 93%
Timeliness	On-Time Submission Rate increased from 58% to 86%, and Escalation Resolution Time decreased from 12 days to 4 days
Process Compliance	Process Compliance increased from 68% to 92%, with clearer role definition through the implementation of the RACI matrix
Operational Efficiency	Manual effort was reduced by 35%, improving resource utilization and reducing administrative workload
Governance & Monitoring	Workflow Standardization Coverage increased from 40% to 100%, and KPI Monitoring Coverage improved from 30% to 95%

The improvement initiative enhanced supplier accountability, operational visibility, process efficiency, and data driven decision making through stronger governance, reduced manual effort, and improved reporting performance.

Conclusions

The implementation of the PDCA methodology, supported by process mapping and a RACI matrix, enabled the successful standardization of the supplier performance reporting process. The results show significant improvements in supplier participation, data quality, reporting accuracy, and timeliness, along with reduced error rates and improved compliance. Overall, the findings demonstrate that a structured reporting framework enhances the reliability and consistency of supplier performance data, strengthening supply chain performance management.

References

[1] Christopher, M. (2016). *Logistics & Supply Chain Management* (5th ed.). Pearson.
[2] Gunasekaran, A., Patel, C., & Tirtiroglu, E. (2001). Performance measures and metrics in a supply chain environment. *International Journal of Operations & Production Management, 21*(1/2), 71–87.