Quality Incident Analysis Report

Author: Devin Richmond
Date: June 2025

Table of Contents

1. Executive Summary

This report summarizes the analysis of 45,000+ quality incidents logged between December 2023 and June 2025. Key findings include:

- **Process issues** lead with 9,385 incidents (21%), making it the top driver of quality failures.
- **Quality department** logs the highest volume (17,496; 39%), reflecting both audit findings and defect reports.
- **Open incidents** comprise 14,667 cases (33%), indicating a significant resolution backlog.
- One-fifth of records lack proper classification: **Unknown category** (724; 2%) and **Unspecified system** (8,744; 20%).

2. Data & Methodology

- **Source:** Simulated incident exports in CSV, cleaned for duplicates, date formats, and typos.
- **Tools:** Excel pivots and PivotCharts, interactive slicers, and timeline controls for dynamic filtering.
- **Steps:** Data cleaning → pivot creation (overview, severity/status, category, department, system) → dashboard assembly.

3. Detailed Findings

3.1. Incident Volume Over Time

- Monthly counts remain stable (~2,400 incidents/month) with a peak in October 2024 (2,629) and a trough in June 2025 (1,726).
- Seasonal dip observed in mid-summer (June–August), spike in Q4.

3.2. Severity & Status Breakdown

- Severity evenly distributed: High (25.3%), Critical (24.8%), Medium (24.9%), Low (25.0%).
- Status skewed: Open (33.5%), other statuses ~16–17% each; 7,301 (16.7%) have Unknown status.

3.3. Category Analysis

- Top five categories: Process (21%), Mechanical (19%), Electrical (19%), Packaging (19%), Software (18%).
- Unknown category remains small but warrants classification improvement.

3.4. Department Ownership

- Quality (39%), Manufacturing (20%), QC (19%), R&D (19%).
- Action: Differentiate audit findings vs. line defects within Quality's logs.

3.5. Source System Analysis

- System c (20%), System a/b/d (~19% each), Unspecified (20%).
- Immediate audit recommended for Unspecified records.

4. Recommendations

1. **Process Improvement:** Prioritize root-cause analysis on Process category incidents to reduce the largest failure mode.
2. **Backlog Reduction:** Implement SLAs for Open incidents and define resolution workflows to cut the 33% backlog.
3. **Classification Audit:** Clean up Unknown category and Unspecified system entries by refining data-entry rules.
4. **Department Drill-Down:** Segment Quality department incidents into audit vs. defect types to allocate resources effectively.
5. **Seasonal Resource Planning:** Increase inspection staffing in Q4 and verify whether the mid-summer dip indicates under-reporting.

5. Next Steps

- **Python Automation:** Build a pandas-based pipeline for reproducible cleaning and reporting.
- **Predictive Analysis:** Explore forecasting incident volumes and severity trends using time-series models.
- **Tableau Deployment:** Publish an interactive web dashboard to share with stakeholders.