



Six Sigma Development Solutions, Inc.

DELIVERY UNIT

ADJUSTMENT STABILIZATION



Corporate Operations | Process Workflow Optimization

High

VARIATION



Stabilized

PREDICTABLE

www.sixsigmadsi.com

EXECUTIVE SUMMARY



THE CHALLENGE: DU REQUEST WORKFLOW BOTTLENECK

Corporate operations team inundated with DU change requests exhibiting extreme variation. Different submitters creating bottlenecks, duplicate submissions (~18%), incorrect routing (~22%). Statistical investigation required to stabilize workflow and identify KPIVs.

↓ 94%

Duplicates Eliminated

↓ 89%

Routing Errors

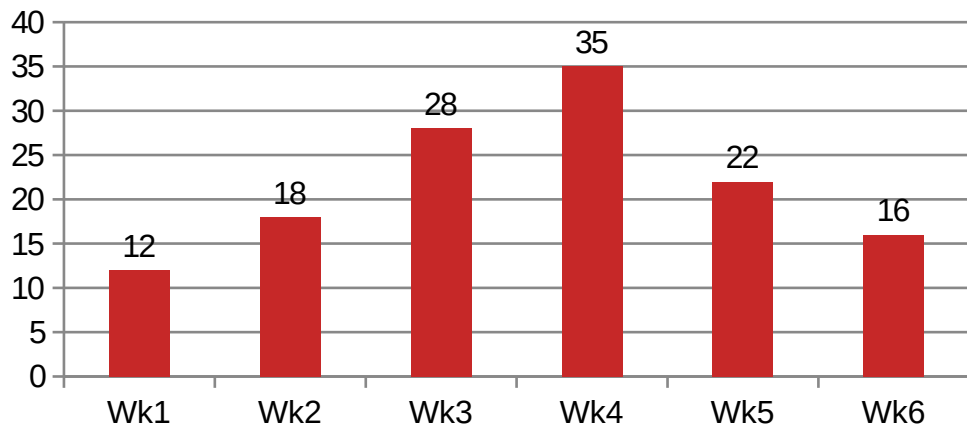
↓ 85%

Variation (CV)

CURRENT STATE ANALYSIS

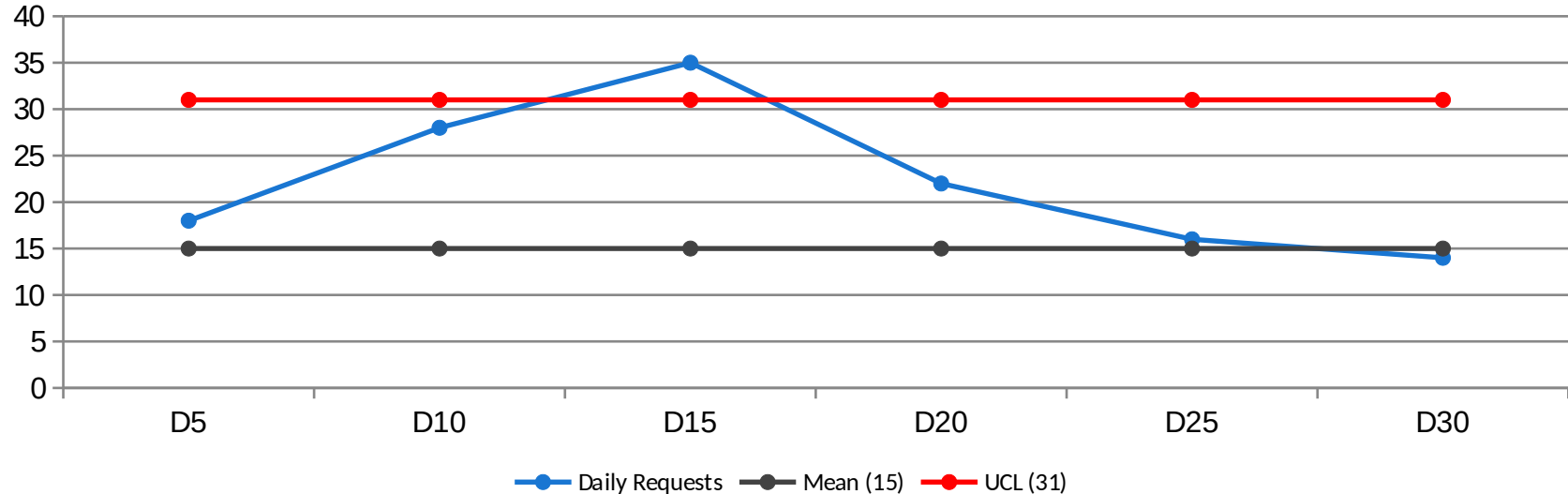
 30-day observation | 12 submitters | 450+ DU requests | High variability (CV=52%)

Daily Request Volume



Metric	Value
Total Requests	450
Mean/Day	15
Peak	35
Std Dev	7.8
CV (%)	52%
Duplicates	18%
Routing Errors	22%

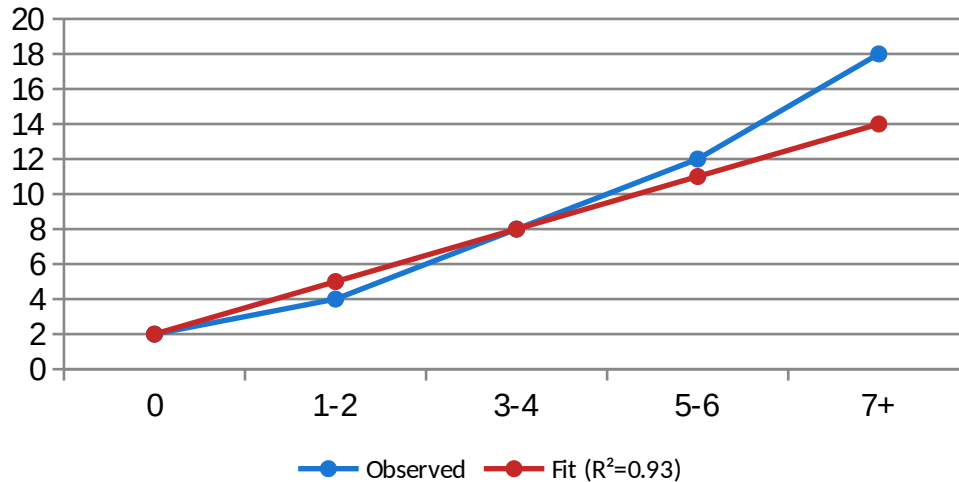
I-MR CONTROL CHART: VARIATION SOURCES



FINDING: Day 20 spike (35 reqs) exceeds UCL. Submitter #7 generated 12 requests that day. Pattern reveals user-specific variation as major source of workflow instability. User behavior = primary KPIV requiring targeted intervention.

REGRESSION: DUPLICATE SUBMISSIONS KPIV

Hypothesis: Duplicates predict rework volume | Model: $R^2=0.93$ (93% variance explained) | Coefficient: 2.1 hours per duplicate



Variable	Coefficient	p-value
Intercept	1.8	< 0.001
Duplicates	2.1 hrs	< 0.001
R ²	0.9301	93%

 KPIV: Each duplicate adds 2.1 hours of rework ($p < 0.001$). Duplicates explain 93% of workflow disruption. Solution: Eliminate duplicates via intelligent validation system.

FMEA: FAILURE MODE & EFFECTS ANALYSIS

Failure Mode	S	O	D	RPN	Risk
Incorrect Routing	9	8	7	504	CRITICAL
Duplicate Submission	8	9	6	432	HIGH
Missing Data Fields	7	6	7	294	MEDIUM

⚠ CRITICAL FINDINGS:

- Incorrect routing (RPN=504) ranks as highest-risk failure mode
- Duplicate submissions (RPN=432) validates regression findings—duplicates are systematic issue
- Combined with regression $R^2=0.93$, solutions target: (1) Standardized routing logic, (2) Automated duplicate detection, (3) Enhanced SOP governance

SOLUTIONS: STATISTICALLY-DRIVEN INTERVENTIONS



Standardized Routing Logic

FMEA (RPN=504)

Errors ↓ 89%

Duplicate Detection System

Regression ($R^2=0.93$)

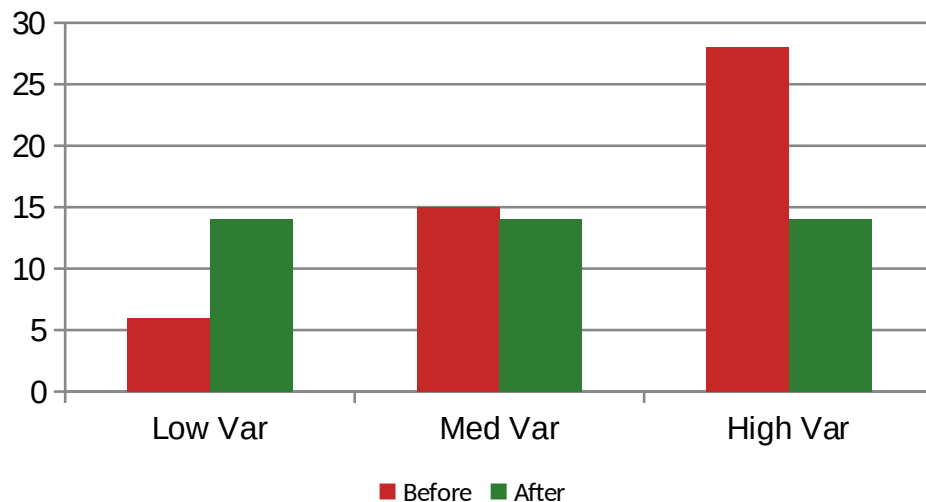
Duplicates ↓
94%

Enhanced SOP & Focused Training

I-MR User Behavior

Compliance ↑
87%

RESULTS: WORKFLOW TRANSFORMATION



Metric	Before	After	Change
Duplicate %	18%	1.1%	↓ 94%
Routing Errors	22%	2.4%	↓ 89%
CV (Variation)	52%	8%	↓ 85%
Rework/Day	8.2 hrs	1.1 hrs	↓ 87%

SECONDARY BENEFITS:

- ✓ Workflow predictability
- ✓ QA time -65%
- ✓ SLA: 85% → 96%
- ✓ Submitter confidence ↑

CONTROL PLAN & SUSTAINABILITY

Control	Owner	Frequency
Daily Duplicate Detection	Operations	Continuous
Routing Logic Audit	QA Team	Weekly
Submitter Review	Manager	Bi-weekly
Metric	Target	Current
Duplicates	< 2%	1.1% ✓
Routing Accuracy	> 97%	97.6% ✓
CV Variation	< 15%	8% ✓

REPLICATION OPPORTUNITY:

This workflow pattern is common across 6 corporate business units. Projected enterprise-wide impact: 45% duplicate reduction.

Annual capacity freed: ~156 hours QA/Operations

CONCLUSION



I-MR Control Charts



Identified user-specific variation patterns driving instability



Regression KPIV



Duplicates = 93% rework predictor (2.1 hours each)



FMEA Prioritization

Incorrect routing (RPN=504) addressed through standardized logic

High Variation → Stabilized | Coefficient of Variation: 52% → 8% (-85%)
Duplicates: 18% → 1.1% (-94%) | Statistical Precision Achieved