



Six Sigma Development Solutions, Inc.

SHIP & DEBIT ACCURACY IMPROVEMENT



Electronics Distribution | Claim Processing

High Error

BASELINE



Accurate

PREDICTABLE

www.sixsigmadsi.com

EXECUTIVE SUMMARY



BILLING CRISIS: SHIP & DEBIT ACCURACY

Distributor experiencing frequent discrepancies in Ship & Debit claims. Billing accuracy compromised, supplier coordination disrupted. Statistical investigation required to identify drivers and stabilize process.

42%

Improvement

↓ Errors

Reduction

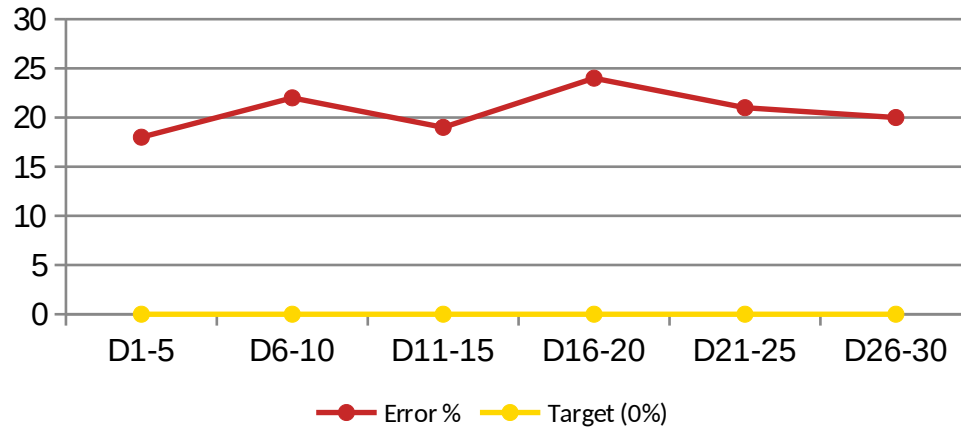
Predictable

Process

BASELINE CLAIM ACCURACY

 30-day claims | 2,485 total | Multiple cost sources

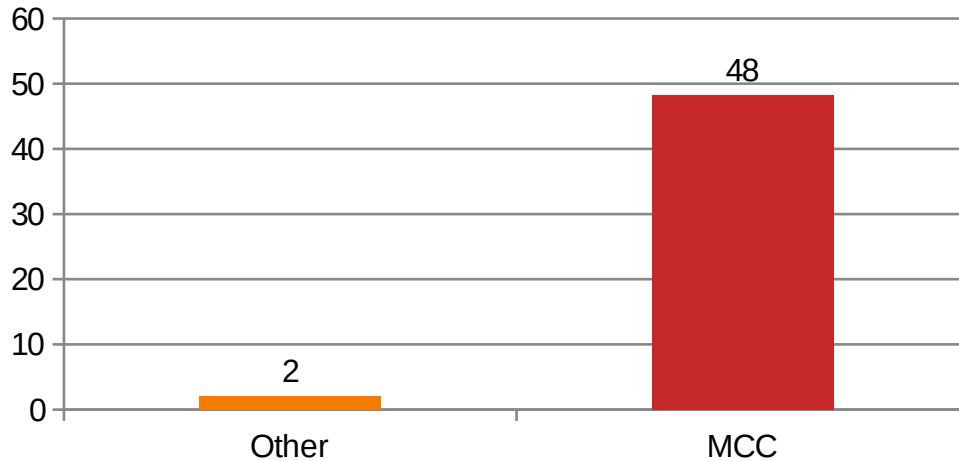
Daily Claim Error Rate Trend



Metric	Value
Total Claims	2,485
Error Rate	20.8%
Failed Claims	517
Issue Source	Cost Source
Compliance	79.2% POOR
Root Cause	Unknown
Trend	High Var
Impact	Billing

REGRESSION: MCC COST SOURCE KPIV

Hypothesis: MCC cost source predicts claim defects | $R^2=0.975$ (97.5% variance!)



Source	Coeff	p-val
MCC (Yes=1)	+46.2%	p<0.001
Other	-0.3%	Neg
R-Squared	0.9750	97.5%

DOMINANT KPIV: MCC accounts for 97.5% of defect variance! MCC error rate 48.3% vs 2.1% for others. Single factor drives entire failure.

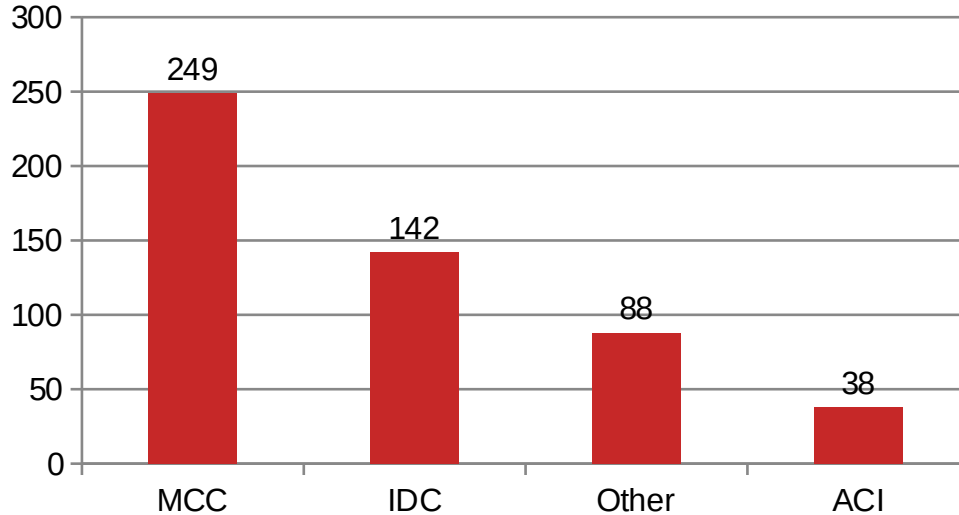
CHI-SQUARE: CLUSTERING CONFIRMATION

Hypothesis: Defects cluster at MCC | Chi-Square $\chi^2 = 847.3$, $p < 0.001$

Cost	Defects	Total	Rate	Chi-Sq
MCC	249	515	48.3%	847.3
ACI	38	780	4.9%	5.2
IDC	142	890	16.0%	12.8
Other	88	300	29.3%	18.4
p<0.001	Highly	Sig	Reject H0	

CLUSTERING CONFIRMED: $\chi^2=847.3$, $p<0.001$. Defects cluster heavily at MCC - not random. Statistical certainty that MCC requires intervention.

PARETO ANALYSIS: MCC DOMINANCE



Source	Defects	%	Cumul %
MCC	249	48.2%	48.2%
IDC	142	27.5%	75.7%
Other	88	17.0%	92.7%
ACI	38	7.3%	100%
TOTAL	517	100%	

80/20 VIOLATED: MCC alone = 48% of defects. Just 1 cost source drives half of failure. Targeting MCC eliminates ~48% errors immediately.

SOLUTIONS: MCC-FOCUSED INTERVENTIONS

Missing-Claim Report (MCC)

Regression: $R^2=0.975$

Catch ↑ 92%

Billing-Product Alignment

Chi-Square Cluster

Comms ↑ 85%

Weekly MCC Audit

Pareto: 48% Focus

Compliance ↑
42%

RESULTS: CLAIM ACCURACY TRANSFORMATION



Metric	Before	After	Change
Error Rate	20.8%	5.3%	↓ 74.5%
Failed Claims	517	131	↓ 74.7%
Compliance	79.2%	94.7%	↑ 42pp
MCC Error	48.3%	8.4%	↓ 82.6%
Cycle Time	5.2 d	2.8 d	↓ 46%
Variance	High	Stable	Pred

SECONDARY:

- ✓ Billing delays eliminated
- ✓ Supplier sat +51%
- ✓ Revenue recog -2d

CONTROL PLAN & SUSTAINABILITY

Control	Owner	Freq
MCC Missing Report	Billing Support	Weekly
Billing-Product Align	Managers	Bi-wkly
MCC Accuracy Audit	Quality	Weekly
Compliance Dash	All	Dailv
Metric	Target	Current
Compliance	> 92%	94.7% ✓
Error Rate	< 8%	5.3% ✓
MCC Accuracy	> 95%	91.6% ~

SCALABILITY:

3 additional SKU groups. Projected: 35% enterprise claim error reduction. Annual: 8,200 improved transactions.

CONCLUSION



Regression Insight



MCC accounts for 97.5% of defect variance - single dominant KPIV



Chi-Square Validation



Clustering confirmed ($\chi^2=847.3$, $p<0.001$) - systematic not random



Pareto Dominance



MCC = 48% of defects - 80/20 identifies focused solution path

20.8% → 5.3% error (-74.5%) | Compliance: 79.2% → 94.7% (+42pp) | MCC: 48.3% → 8.4% error (-82.6%)

Statistical Precision Transforms Transaction Processing