

Case Study: Building a Business Case for Data Quality at Grumpy Widgets & Sprockets

Version 1.0

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Introduction

Executive Summary

Grumpy Widgets & Sprockets is a mid-sized manufacturer and distributor of industrial widgets, sprockets, and replacement parts serving customers throughout North America. Over time, the company experienced significant growth through acquisitions, new sales channels, and the implementation of multiple business systems. As a result, customer, supplier, and product information became fragmented across CRM, ERP, e-commerce, and service management platforms. One of the most significant challenges identified by management was the rapid growth of duplicate customer records.

To address these issues, the organization developed a Data Quality Framework initiative designed to improve data quality governance, establish stewardship processes,

implement profiling and matching technologies, and reduce duplicate records throughout the enterprise. Before funding could be approved, executive sponsors requested a formal Return on Investment (ROI) analysis.

Business Problem

A data profiling assessment revealed the following conditions:

Metric	Value
Total Customer Records	500,000
Estimated Duplicate Rate	12%
Duplicate Records	60,000
Annual New Customers Added	75,000
Systems Containing Customer Data	7
Customer Service Representatives	120
Sales Representatives	85

The assessment found that duplicate records were creating multiple business problems:

- Duplicate sales activities
- Duplicate marketing communications
- Customer service inefficiencies
- Incorrect reporting
- Billing errors
- Shipment delays
- Regulatory compliance concerns
- Reduced customer satisfaction

Quantifying the Financial Impact

The project team worked with business stakeholders to estimate the annual cost of duplicate customer data.

Customer Service Impact

Customer service representatives reported spending approximately 3 minutes identifying the correct customer record when duplicates existed.

Annual Calculations

25,000 duplicate-related calls annually
× 3 minutes per call
= 75,000 minutes

75,000 ÷ 60
= 1,250 labor hours

Average loaded labor cost:

1,250 hours × \$40/hour
= \$50,000 annually

Sales Productivity Impact

Sales representatives frequently contacted customers who already existed in the CRM system under different names or spellings.

Estimated impact:

85 sales representatives
× 20 hours annually
= 1,700 hours

Average loaded cost:

$$\begin{aligned} &1,700 \times \$75/\text{hour} \\ &= \$127,500 \text{ annually} \end{aligned}$$

Marketing Waste

The marketing department discovered duplicate mailings and email campaigns.

Annual waste:

$$\begin{aligned} &20,000 \text{ duplicate communications} \\ &\times \$3 \text{ average cost} \\ &= \$60,000 \text{ annually} \end{aligned}$$

Reporting and Reconciliation Costs

Business analysts spent considerable effort reconciling conflicting customer counts.

Estimated effort:

$$\begin{aligned} &4 \text{ analysts} \\ &\times 120 \text{ hours annually} \\ &= 480 \text{ hours} \end{aligned}$$

At \$65 per hour:

$$\begin{aligned} &480 \times \$65 \\ &= \$31,200 \text{ annually} \end{aligned}$$

Billing and Shipping Errors

Duplicate customer records occasionally resulted in incorrect shipments and invoice adjustments.

Annual estimated cost:

\$85,000

Total Annual Cost of Duplicate Data

Cost Category	Annual Cost
Customer Service	\$50,000
Sales Productivity	\$127,500
Marketing Waste	\$60,000
Reporting & Reconciliation	\$31,200
Billing & Shipping Errors	\$85,000
Total Annual Cost	\$353,700

Proposed Data Quality Framework

The project team proposed implementation of the Grumpy Old IT Guy Data Quality Framework (GITG-DQF™), including:

Governance

- Data Governance Council
- Data Stewardship Program
- Data Quality Policies
- Data Quality Metrics

Technology

- SQL Server Data Quality Services (DQS)

- Master Data Services (MDS)
- SQL Server Integration Services (SSIS)
- Data Profiling Processes
- Matching and Survivorship Rules

Operational Processes

- Duplicate prevention controls
- Ongoing profiling
- Stewardship reviews
- Exception management
- Data quality scorecards

Project Costs

One-Time Costs

Item	Cost
Assessment & Design	\$35,000
DQS Configuration	\$40,000
MDS Configuration	\$30,000
SSIS Development	\$45,000
Stewardship Training	\$20,000
Dashboard Development	\$30,000
Total One-Time Cost	\$200,000

Annual Operating Costs

Item	Cost
Stewardship Activities	\$40,000
Monitoring & Reporting	\$15,000
Ongoing Administration	\$20,000

Item	Cost
Total Annual Operating Cost \$75,000	

Expected Benefits

The initiative projected a reduction in duplicate customer records from 12% to 3% during the first year.

This represented a 75% reduction in duplicate-related costs.

Estimated Annual Savings

$$\begin{aligned} & \$353,700 \times 75\% \\ & = \$265,275 \end{aligned}$$

ROI Calculation

First-Year Net Benefit

Annual Savings
\$265,275

Minus Operating Costs
\$75,000

Net Annual Benefit
\$190,275

ROI Formula

$$\begin{aligned} \text{ROI} &= \\ & (\text{Net Benefit} \div \text{Project Cost}) \\ & \times 100 \\ \text{ROI} &= \\ & (\$190,275 \div \$200,000) \end{aligned}$$

$\times 100$

ROI = 95.1%

Payback Period

Project Cost
\$200,000

Annual Net Benefit
\$190,275

Payback Period

$\$200,000 \div \$190,275$

= 1.05 years

Approximately:

12.6 Months

Additional Non-Financial Benefits

Several benefits were difficult to quantify but were considered strategically important:

- Increased customer satisfaction
- Improved executive reporting
- Better sales forecast
- More accurate analytics
- Reduced compliance risk
- Improved operational efficiency
- Greater confidence in enterprise data
- Stronger foundation for AI and analytics initiatives

Executive Decision

Based on the projected 95% first-year ROI and an estimated 12-month payback period, executive sponsors approved funding for the Grumpy Widgets & Sprockets Data Quality Framework initiative.

Within eighteen months of implementation, duplicate customer records were reduced substantially, stewardship processes became part of normal operations, and data quality metrics were incorporated into monthly management reviews. The project ultimately demonstrated that data quality is not merely a technical improvement effort but a business investment that delivers measurable financial returns and improves decision-making across the enterprise.

Case Study Note: This case study is entirely fictional and is provided for educational purposes. Grumpy Widgets & Sprockets is a fictitious organization created to demonstrate how organizations can build a financial business case for data quality governance and duplicate data remediation initiatives.

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