

Mopex Consulting

DMAIC Framework



Operational Excellence, made measurable

Mopex Consulting Ltd

Operational Excellence, made measurable

Mopex DMAIC Framework



Baseline [No. 1] Data Measure Overview

Process Name: Cookie Process Batch: 1
 Part Name: Cookie Time:
 Machine/Operator: Pete Date: 09/09/2025

Report Data

6 Sigma Data Std Dev Data 50 vs 65 Data Distribution Data Variance Data Cp & Cpk Data

Input Section

Parameter	Weight
Size	100
Target (Nominal)	100
USL	95
LSL	105
Mean(μ)	100
Std Dev (σ)	8

Calculating 6 Sigma - Discrete Data

Number of Opportunities (U)	100
Number of Opportunities (O)	1
Number of Defects (D)	31
DPU	31%
DPMO	0.31000
OPPMO	310000
Yield	69.0%
6 Sigma	2
Z Score	0.97702

Non-Competitive

USL	95
LSL	105
Cav	0.199
Cpl	0.228
6 Sigma	1.2

Calculating 3 Sigma - Continuous Data

Mean(μ)	100
Variance	61
Std Dev (σ)	8

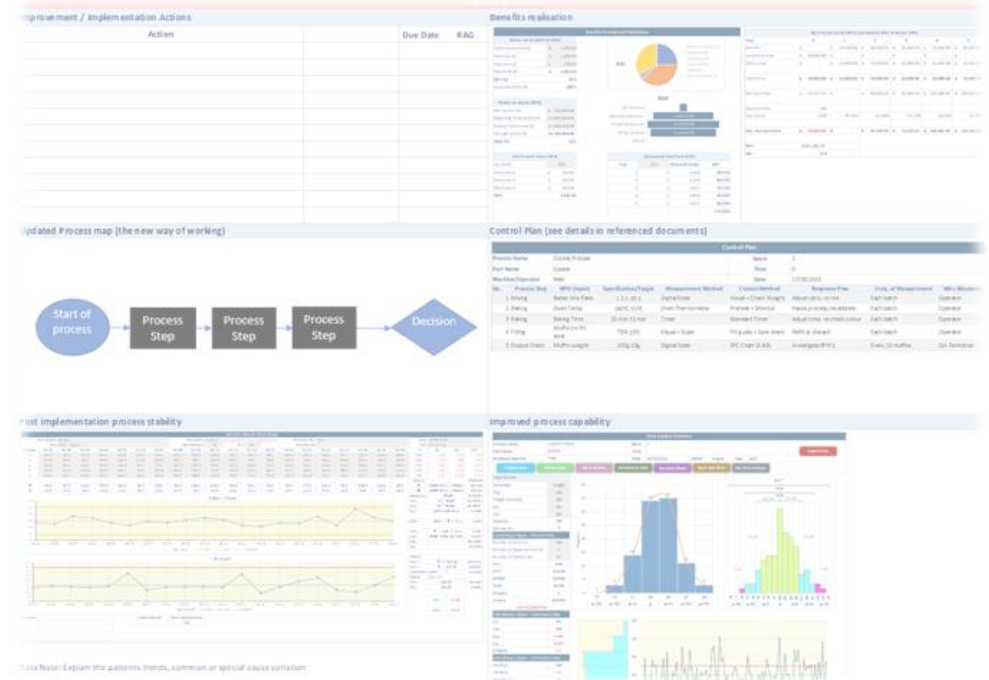
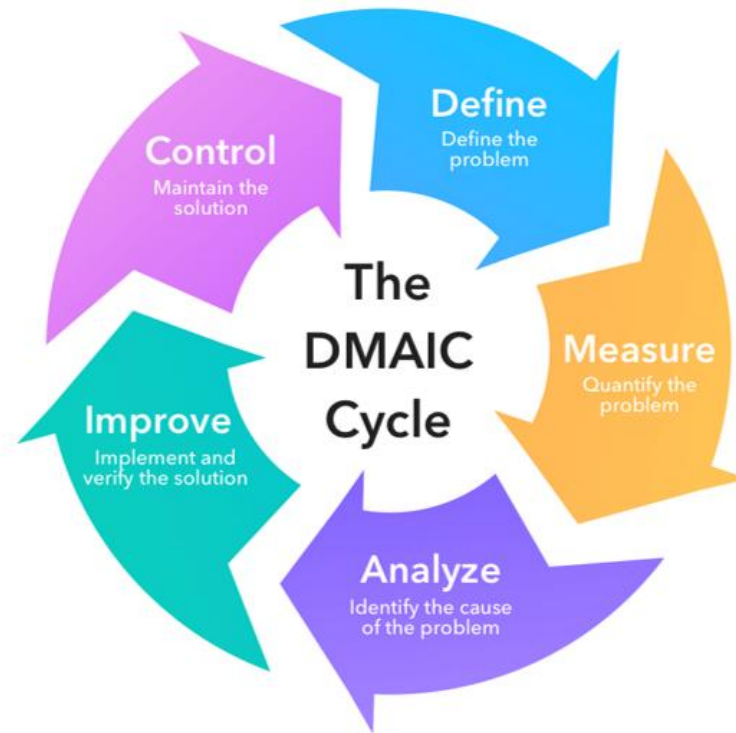
Drive structured problem-solving and performance uplift using the DMAIC methodology—Define, Measure, Analyse, Improve, Control.



Mopex
Consulting

Operational Excellence, made
measurable

Mopex DMAIC Framework



Pre-Project Assessments

DMAIC Maturity Level Scoring

DMAIC Maturity Level Scoring

Excel Tool Structure

DMAIC Dimension	Score (1-5)	Notes / Evidence	Recommended Action
Problem Definition	3		
Data Collection	2		
Root Cause Analysis	2		
Solution Design	3		
Sustainment	4		
Team Capability	3		
Governance & ROI	2		

Calculated Outputs

Metric	Outcome
DMAIC Maturity Index (%)	54%
Avg. Maturity Score	3
DMAIC Maturity Level	Defined

Maturity Scores

DMAIC Dimension

Mopex DMAIC Maturity Map Template

Mopex DMAIC Maturity Map Template

Maturity Summary

Domain	Score (1-5)	RAG Rating	Notes
Define	3	Fair	Problem statements lack business impact
Measure	2	Poor	Data collection inconsistent across sites
Analyse	2	Poor	RCA tools used ad hoc, no standardisation
Improve	3	Fair	Solutions trialled but not sustained
Control	4	Good	Control plans active in key areas
Stakeholder Engagement	3	Fair	Limited sponsor visibility
Data & Tools	2	Poor	No centralised dashboarding

Maturity Drivers

Domain	Gap Driver	Validation Method	Status	Linked Tool
Define	Weak problem framing	Charter review	Confirmed	DMAIC Charter Template
Measure	No data plan	Data audit	Confirmed	Measurement Plan
Analyse	No RCA standard	RCA workshop	Pending	RCA Toolkit
Improve	No pilot tracking	Solution review	Confirmed	Improvement Tracker
Control	No sustain plan	Control plan audit	Confirmed	Control Plan Template
Stakeholder Engagement	No comms plan	Sponsor interview	Pending	Stakeholder Map
Data & Tools	No data plan	Data audit	Confirmed	Power BI Dashboard

DMAIC Maturity Results and 90 Day Roadmap

DMAIC Maturity Results and 90 Day Roadmap

Maturity Score Results

Dimension	Current Level	Target Level	Gap	Priority	Owner	Notes
Problem Definition	3	4	1	Medium	Mopex Lead	Governance dashboard needed
Data Collection	2	4	2	High	Ops Lead	SPC rollout in progress
Root Cause Analysis	2	4	2	High	Analyst	Predictive modelling roadmap
Solution Design	3	5	2	Medium	QA Lead	ISO 9001 embedded
Sustainment	4	5	1	Low	Ops Lead	Toolkit standardisation
Team Capability	3	4	1	Medium	BI Lead	Power BI templates in dev
Governance & ROI	2	3	1	High	Mopex Lead	Link to Benefits Tracker

90 Day Roadmap

Dimension	Score	Week 1-2	Week 3-4	Week 5-8	Target	Owner	Status	Notes
Data Collection	2	Conduct defect analysis	Launch CAPA training	Build SPC dashboard	Reduce defect rate by 25%	Ops Manager	<input type="checkbox"/>	
Root Cause Analysis	2	Audit current tools	Train on dashboard use	Automate KPI tracking	Improve data accuracy by 30%	Digital Lead	<input checked="" type="checkbox"/>	
Governance & ROI	2	Review risk assessments	Launch safety training	Set up H&S KPIs	Reduce incident rate by 20%		<input checked="" type="checkbox"/>	

Mopex DMAIC Project Framework

Purpose: Drive structured problem-solving and performance uplift using the DMAIC methodology—Define, Measure, Analyse, Improve, Control.

Use Cases	Service Description
Defect reduction and quality improvement	<ul style="list-style-type: none"> Phase 1. Define
Process optimisation and variation control	Purpose: Frame the problem, scope, and success criteria.
Compliance and audit readiness	<ul style="list-style-type: none"> Phase 2. Measure
Cost reduction and performance uplift	Purpose: Quantify current performance and validate the issue.
Root cause analysis and solution design	<ul style="list-style-type: none"> Phase 3. Analyse
	Purpose: Identify and validate root causes.
	<ul style="list-style-type: none"> Phase 4. Improve
	Purpose: Design and implement targeted solutions.
	<ul style="list-style-type: none"> Phase 5. Control
	Purpose: Sustain gains and prevent backsliding.

Mopex DMAIC Toolkit (Suggested Assets)

Asset	Format	Purpose
DMAIC Project Charter Template	Word/Excel	Define scope and objectives
SIPOC & Process Map Templates	Excel/Visio	Visualise process boundaries
CTQ Tree & VOC Capture Sheet	Excel	Translate customer needs
Root Cause Analysis Pack	Word/Excel	Analyse and prioritise causes
Kaizen Event Planner	Excel	Structure rapid improvement
Control Plan & SPC Dashboard	Excel/Power BI	Monitor and sustain performance
Benefits Tracker & ROI Model	Excel	Quantify impact and payback
Report-Out Slide Deck	PowerPoint	Communicate results to client

DMAIC Project Tracking Documents linked to Dashboard

Mopex DMAIC Project Charter

Section 1: Project Definition

Project Title	Reduce Defects in Muffin Labelling Process
Sponsor	Client QA Director
Project Lead	Mopex Consultant
Start Date	10/11/2025
Target Completion	10/01/2026

Section 2: Problem Statement

The muffin packaging line has a defect rate of 9%, primarily due to mislabelled packs. This leads to rework, customer complaints, and audit failures.

Section 3: SMART Goals

Goal	Metric	Target
Reduce defect rate	DPU	≤ 0.5
Improve FPY	FPY	≥ 97%
Increase audit pass rate	Audit Score	≥ 90%

Section 4: Stakeholder Map

Role	Name	Influence	Engagement Plan
Sponsor	QA Director	High	Weekly governance board
Ops Lead	Tom Lee	Medium	Daily huddles
Line Supervisor	Jane Smith	High	RCA workshops

Section 5: Scope & Boundaries

Mopex Benefits Tracker & ROI Model

Forecasted Benefit (£)	Actual Benefit (£)	Owner	Status	Notes
£40,000.00	£0.00	Ops Lead	In Progress	Linked to CI-001

Implementation Cost (£)	Net ROI (£)	Payback Period (Months)	Strategic Fit	Owner	Notes
£15,400.00	£24,600.00	4.6	4	Ops Lead	Linked to CI-001

Mopex DMAIC Project Overview

Project Charter | Business Case | Benefits & ROI | Metrics | Progress Chart | Risk Register | Issue Register | Lessons Log | Project Report

Project Details

Client Name	Muffin & Co Bakery
Project Name	Reduce Defects in Muffin Labelling Process
Project Duration	Start: 10/11/2025, Target: 10/01/2026, Tot. Days: 45
Total Phases	5
Current Phase	Define Phase
Phase Progress %	0%

Benefits & ROI Summary

Total Forecasted Benefit (£)	£40,000.00
Total Realised Benefit (£)	£0.00
Net ROI (£)	£24,600.00

Project Status

of Tasks: 25

- Complete Tasks: 0
- In Progress: 0
- Tasks ON HOLD: 0
- Tasks Overdue: 25
- Not Started: 0

Risks

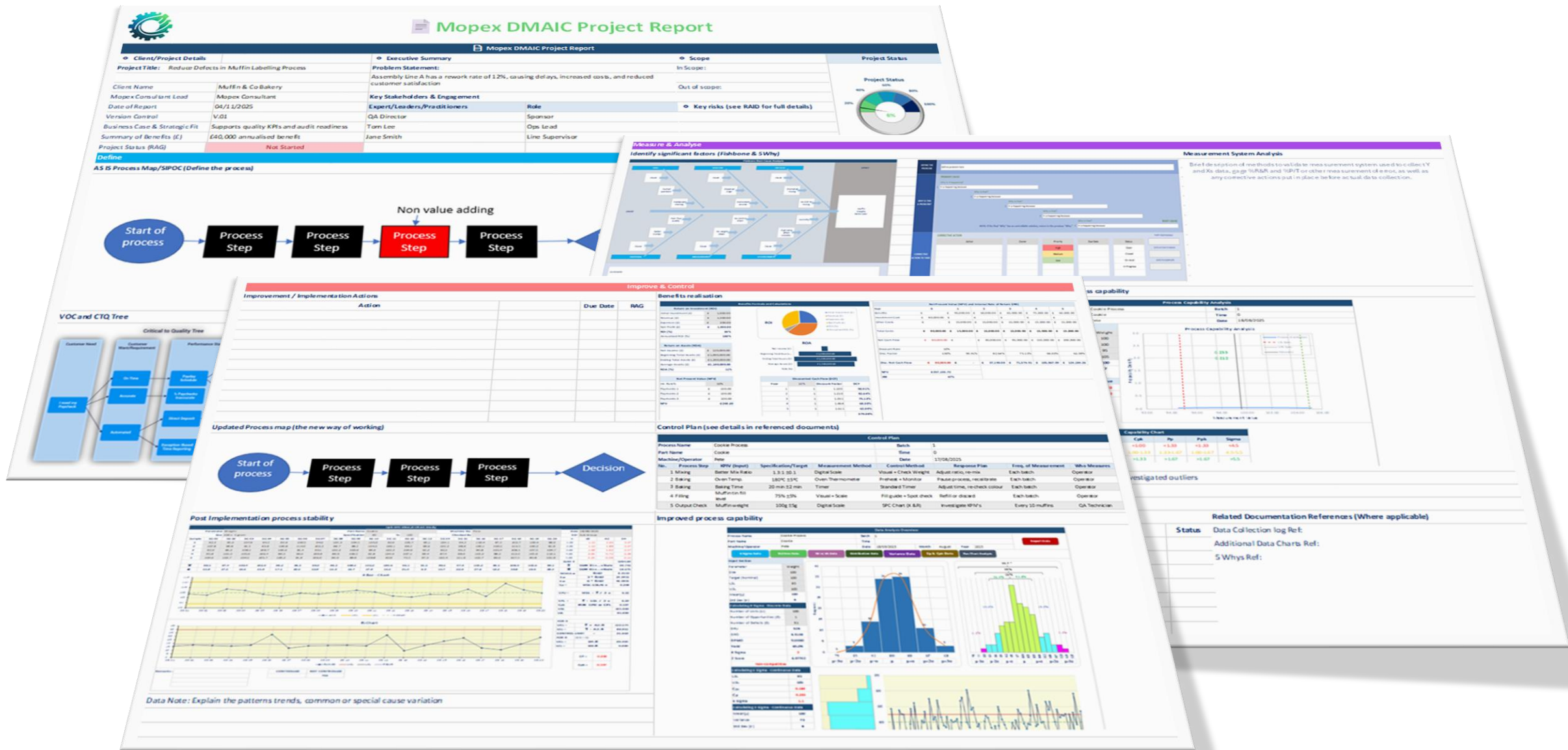
Open: 5, Mitigated: 0

Metric Status

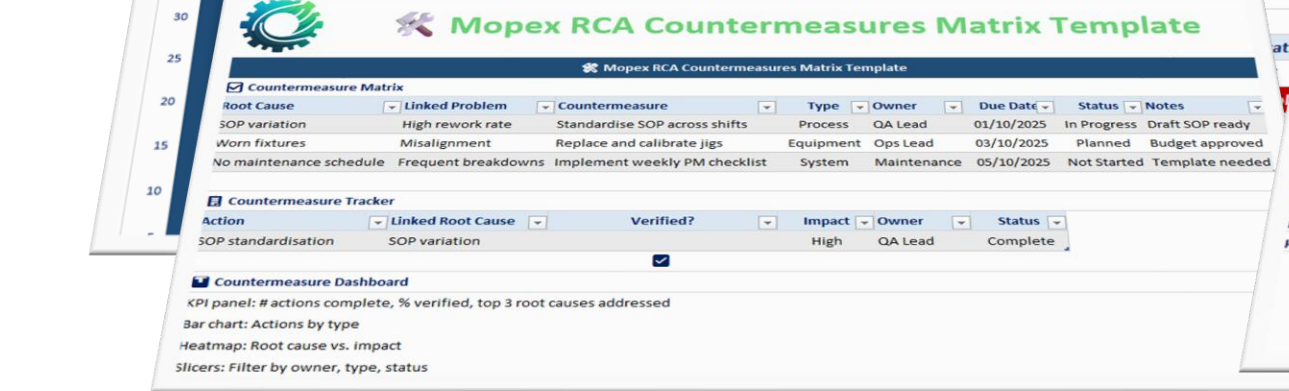
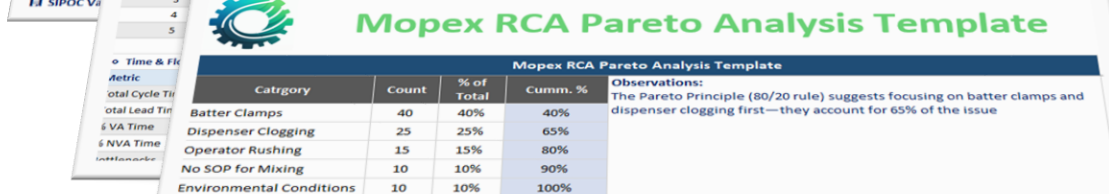
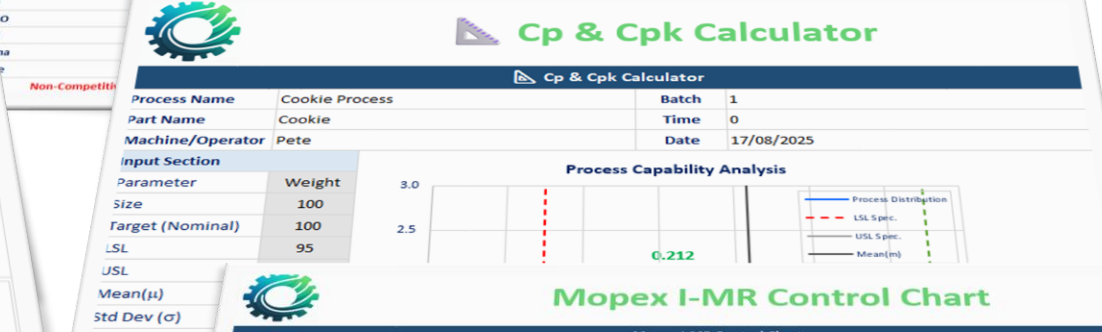
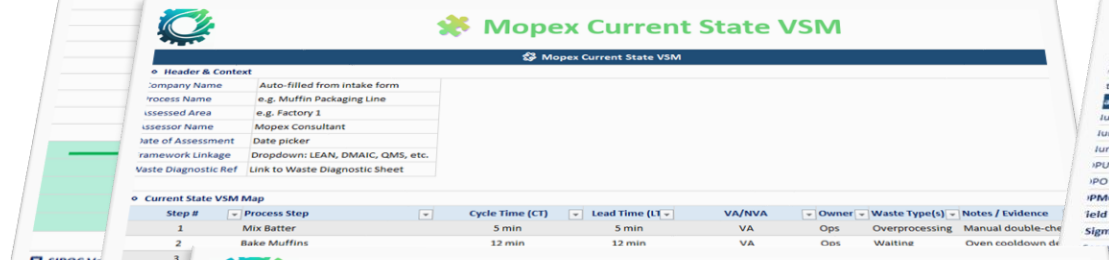
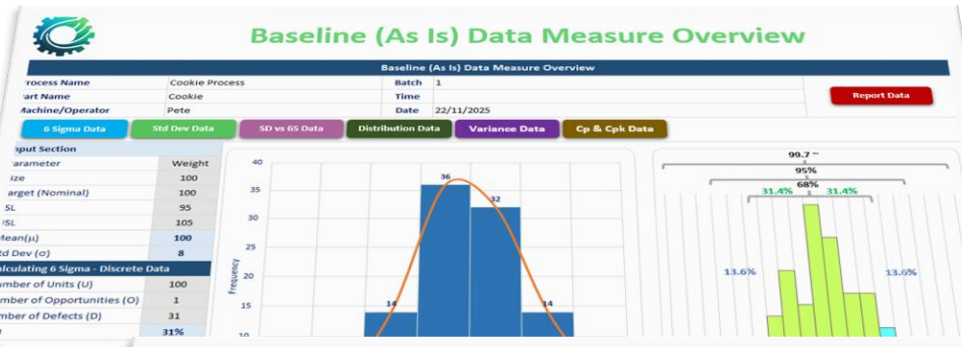
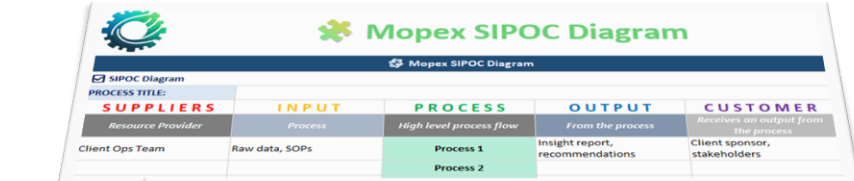
33% (At Risk: 0, Off Track: 0, On Track: 33%)

Phase	Goal	Compliance Lead	Status	Progress %	Start Date	End Date
Define Phase	Problem Statement		Not Started	0%	14/11/2025	14/11/2025
	Project Scope		Not Started	0%	17/11/2025	17/11/2025
	Voice of Customer		Not Started	0%	17/11/2025	17/11/2025
	Business Case		Not Started	0%	18/11/2025	18/11/2025
	Charter		Not Started	0%	19/11/2025	19/11/2025
Measure Phase	Milestone		Not Started	0%	20/11/2025	20/11/2025
	Process Map	Delivery Lead	Not Started	0%	21/11/2025	21/11/2025
	Data Collection Plan	Compliance Lead	Not Started	0%	21/11/2025	21/11/2025
	Baseline Metrics	PM	Not Started	0%	24/11/2025	24/11/2025
	Measurement System Analysis (MSA)	Delivery Lead	Not Started	0%	24/11/2025	24/11/2025
	Control Charts	Compliance Lead	Not Started	0%	25/11/2025	25/11/2025
Analyse Phase	Milestone		Not Started	0%	25/11/2025	25/11/2025
	Root Cause Analysis	Delivery Lead	Not Started	0%	26/11/2025	26/11/2025
	Value-Added Analysis	Compliance Lead	Not Started	0%	27/11/2025	27/11/2025
	Bottleneck Diagnosis	PM	Not Started	0%	27/11/2025	27/11/2025
	Cause & Effect Matrix	Delivery Lead	Not Started	0%	27/11/2025	27/11/2025

DMAIC A3 Project Reporting



Some DMAIC Project Tools



Mopex DMAIC Framework



DMAIC Project Pricing

🌸 Mopex Six Sigma DMAIC Project Framework				
Fixed Fee Model	Deiverables	Duration (W)	Tier Range	Price Range
OpEx Lite	Diagnostic + Roadmap	2-4	Bronze	£2,280-£3,800
OpEx Core	DMAIC Optimisation Methods	6-14	Gold	£11,400-£19,000
OpEx Plus	OpEx Core + Training + Dashboard	6-18	Platinum	£19,000-£30,400+
OpEx Enterprise	Monthly DMAIC CI Governance	TBC	TBC	TBC
Milestone Model	Deliverables	Timing	% of Total Fee	OpEx Core Package Example £11,400.00
Define & Kickoff	Project charter, VOC analysis, stakeholder alignment	Week 1-2	20%	
Measure & Analyze	Data collection plan, baseline metrics, root cause analysis	Week 3-5	25%	
Improve	Solution design, pilot implementation, impact tracking	Week 6-7	25%	
Control & Handover	Control plan, SOPs, training, dashboard	Week 8-9	20%	
Bonus ROI Pack	ROI logic, DMAIC dashboard, comms assets	Optional	10%	
Month Model	Deliverables	Timing	Fee (£)	
Month 1	Waste diagnostic, process walk, Kaizen event, updated SOPs	1	£7,600.00	
Month 2	Final waste map, control actions, training handover	0.5	£3,800.00	
Month 3	Control plan, SOPs, dashboard, ROI forecast	0	£0.00	

Mopex ROI Forecast Model for DMAIC Projects

Mopex ROI Forecast Model for DMAIC Projects, it's designed to quantify the financial and operational impact of data-driven process improvement using the DMAIC methodology.

1. Cost Inputs

Category	Typical Range
Mopex Implementation Fees	£30,000–£65,000 (fixed or day rate)
Internal Resource Allocation	120–350 hours (client-side)
Tooling & Digital Assets	£5,000–£15,000 (Excel, Power BI, Python, Mopex templates)
Data Collection & Analysis	£3,000–£10,000 (surveys, ETL, dashboards)
Change Management & Training	£2,000–£6,000

2. Value Drivers

Driver	Mopex Impact Range
Defect Reduction	30–70% fewer errors and rework incidents
Process Cycle Time Improvement	15–40% faster execution across key workflows
Cost Avoidance (Labour & Waste)	£20k–£150k saved annually
Customer Satisfaction Uplift	10–25% improvement in CSAT/NPS scores
Compliance Risk Mitigation	£10k–£100k avoided exposure
Productivity Gains	10–35% increase in throughput or output

3. Example ROI Scenarios

Scenario	Cost (£)	Value (£)	ROI (%)
SME, DMAIC applied to service workflow	£40,000	£130,000	225%
Mid-size, DMAIC + LEAN integration	£60,000	£220,000	267%
Enterprise, multi-site DMAIC rollout	£85,000	£320,000	276%

Mopex DMAIC Framework



DMAIC Project Tools Available





Mopex Six Sigma Calculators

Sigma Calculations		
Process Name	Cookie Process	Batch 1
Part Name	Cookie	Time
Machine/Operator	Pete	

Input Section	
Parameter	Weight
Size	100
Target (Nominal)	100
LSL	95
USL	105
Mean (μ)	100
Std Dev (σ)	8

Calculating 6 Sigma - Discrete Data

Number of Units (U)	100
Number of Opportunities (O)	1
Number of Defects (D)	31
DPU	31%
DPO	0.310
DPMO	31000
Yield	69.0%
6 Sigma	2
Z Score	0.97

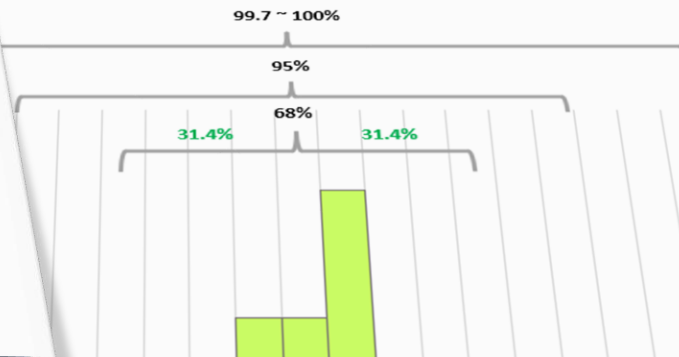
Non-Competitive

Calculating 6 Sigma - Continuous Data



Standard Deviation vs Six Sigma

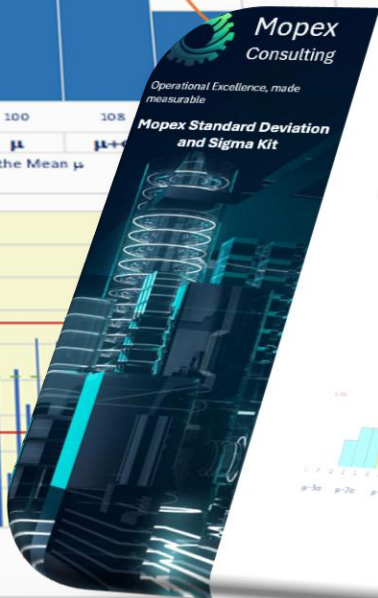
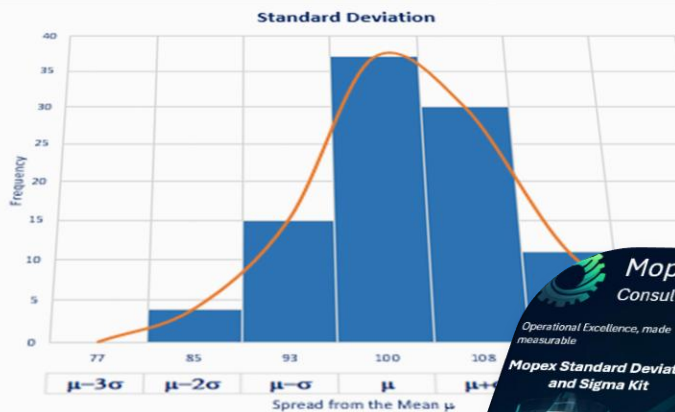
Standard Deviation vs Six Sigma		
Process Name	Cookie Process	Batch 1
Part Name	Cookie	Time
		Date 23/11/2025



Mopex Standard Deviation

Mopex Standard Deviation		
Process Name	Cookie Process	Batch 1
Part Name	Cookie	Time
Machine/Operator	Pete	Date 23/11/2025

Input Section	
Parameter	Weight
Size	100
Target (Nominal)	100
LSL	95
USL	105
Mean (μ)	100
Variance	61
Std Dev (σ)	8
$\mu-3\sigma$	77
$\mu+3\sigma$	124



Sigma Calculations						
Cookie Process		Batch 1				
Cookie		Time				
Pete		Date 09/09/2025				
Weight	Yield	ESPMO	Sigma	Yield	DPMO	Sigma
100	8.6%	934,000	0	93.3%	66,800	3
100	8.0%	920,000	0.1	94.3%	54,800	3.2
95	10.0%	900,000	0.2	95.3%	44,800	3.3
105	12.0%	880,000	0.3	96.4%	35,900	3.4
100	14.0%	860,000	0.4	97.2%	28,700	3.5
8	16.0%	840,000	0.5	97.7%	22,700	3.6
	19.0%	810,000	0.6	98.2%	17,800	3.6
Number of Units (U)	22.0%	780,000	0.7	98.6%	13,900	3.7
1	25.0%	750,000	0.8	98.9%	10,700	3.8
33	28.0%	730,000	0.9	99.2%	8,150	3.9
31%	31.0%	690,000	1	99.4%	5,230	4
DPU	35.0%	650,000	1.1	99.5%	4,660	4.1
0.3100	39.0%	610,000	1.2	99.7%	3,460	4.2
DPMO	43.0%	570,000	1.3	99.75%	2,550	4.3
31000	46.0%	540,000	1.4	99.81%	1,840	4.4
Yield	50.0%	500,000	1.5	99.87%	1,350	4.5
69.0%	54.0%	480,000	1.6	99.90%	950	4.6
2	56.0%	420,000	1.7	99.93%	680	4.7
Z Score	0.97702					