

DMAIC PHASE REVIEW CHECKLIST

Project Name: _____ Project ID: _____
 Project Lead: _____ Black Belt: _____
 Champion: _____ Kick-Off Date: mm / dd / yyyy
 Project CTQ & Target: _____

D-M-A-I-C: DEFINE

Project Identification:

Big Y linkage identified : _____
 Customer(s) & Customer type identified : _____
 Voice of Customer (VOC) validated : _____
 Cost of Poor Quality (COPQ) estimated : _____
 Project CTQ identified & validated : _____
 Documented potential conflicting CTQs (Boundary Conditions) : _____

Project Charter:

Business Case – Covers the need & urgency : _____
 Problem Statement – Measurable problem observed over specific time : _____
 Goal Statement – Is S.M.A.R.T. : _____
 Project Scope – Clear scope definition, conflicting / related CTQs identified : _____
 CTQ Definition / Measures – Appropriate measures, level & frequency : _____
 COPQ calculations – Validated assumptions & calculations : _____

High Level Process Map:

As – is process mapped : _____
 All Customers identified correctly : _____
 End to end process documented from customer perspective : _____
 Process start – stop & project limits identified : _____

Project Plan:

Key Milestones & realistic timelines documented : _____
 Key Stakeholders & communication plan documented : _____
 Escalation plan documented : _____
 BB / Mentor time allocation documented : _____
 Project team time commitment & schedule signed by Sponsor / Champion : _____

Tools Used:

Surveys	QFD	FMEA	Gantt Chart
Situation Analysis	Problem Analysis	Decision Analysis	Others _____

Tollgate Panel: _____ Date: _____

Comments: _____

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D-M-A-I-C: MEASURE

Project CTQ Detailed:

Prioritization of CTQ characteristics – logical translation done : _____
 CTQ measurement formula detailed : _____
 Appropriate unit of measure identified : _____
 Rationale for specification limits (cont. Y) / defect & opportunity definition validated (disc. Y) : _____

Data Collection Plan:

Detailed process map / deployment chart / value-stream mapping done : _____
 Data sampling method & sample size justified : _____
 Data collection template & procedures justified : _____
 Frequency, method & level of Data Capture in line with CTQ definitions : _____
 Relevance for segmentation factors justified : _____

Measurement Systems Analysis:

Valid rationale for method of MSA / no MSA : _____
 MSA conducted for Accuracy / Reproducibility / Repeatability / Linearity (as relevant) : _____
 MSA sample justified : _____
 MSA Method: _____
 Short-form: ___ Test-Retest: ___ ANOVA: ___ Attribute: ___
 MSA Pass / Fail : _____
 In case of MSA failure / correction & revalidation completed : _____

Process Capability Baseline:

Run Chart & Basic statistics of project Y documented : _____
 Normality check for continuous data : _____
 Subgroup selection justified (Cont. data) : _____
 Spec limits & boundary conditions used correctly : _____
 Both Short-term & overall capability established (Cont. data) : _____

Tools Used:

Surveys	QFD	FMEA	MSA: (Type)
Deployment Chart	Fish-Bone Diagram	Value-stream map	Normality (A-D test)
Sampling (Type)	Pareto Diagram	Logic Tree	Multi-Vari. Charts
Run Charts	Histogram	Proc. Capability	Others _____

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Comments: _____

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D-M-A-I-C: ANALYZE

Statistical problem:

Problem established in terms of PPM or centering / variation : _____
 Target validated in terms of PPM reduction, tail reduction, span/SD, etc : _____

Sources of Variation:

Approach defined in detailed – Logic based, Time Study, Hypothesis Testing / other relevant studies : _____
 Cont. data – Correct measure for Central tendency & Variation identified : _____
 Cont. data – Normality interpreted correctly, Outliers / Special causes identified & addressed : _____
 Identification of potential X's exhaustive – Use of Fishbone, Brain-writing, Interviews, Tests, etc covered. : _____
 Hypothesis testing – Tests used appropriately for continuous (normal / non-normal) & discrete data : _____
 Hypothesis testing – Appropriate sample size used for each hypothesis test : _____
 X's with a high correlation to Y identified : _____
 Causation interpreted correctly for the X's showing high correlation : _____
 Established the vital few X's causing maximum change in Y : _____
 Determined $Y=f(X)$ between the critical X's & the statistical Y measure selected (Centering or spread, i.e mean, Quartile, stdev, span, etc) : _____
 Optimal settings for X's Derived – Interaction effects considered : _____

Project Plan & Project Storyboard Update:

Project control sheet / Storyboard updated : _____
 Team meetings and communications are as per project plan : _____
 Mentoring / Escalations are as per plan : _____
 Project findings shared with Champion / Sponsor (Minutes, emails, etc) : _____

Tools Used:

1 Sample T-test	2 sample T-test	Paired T-test	HOV
ANOVA	Mood's Median	Linear Regression	Multiple Regression
Stepwise Regression	GLM	Correlation	PLS regression
Multivariate tests	DOE	Chi-squared	Logic Tree
Current Reality Tree	Relationship diagram	Affinity Diagram	Fishbone diagram
Value stream map	Mixed model PM	Effective hour tool	Capacity analysis
Demand at capacity	Line balancing	Simulation	Brain storming / writing
5 Ws & 1 H	Time Study	Audits	Others _____

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D-M-A-I-C: IMPROVE

Solution Generation:

Statistical solution validated against project target of PPM or centering / variation : _____
 Solution Generation tools appropriately used (SCAMPER, Thinking hats, Brainstorming/writing, etc.) : _____
 Appropriate solution prioritization matrix used : _____
 Pilot & control environment / test approach documented : _____
 Simulation / DOE design & approach documented : _____
 Solution testing done correctly and change in Project Y as estimated : _____
 Detailed 'New' process map / cross-functional deployment chart made : _____
 Cost-Benefit Analysis on Solutions documented & validated : _____
 Solutions impact of the corresponding X's documented : _____

Operating Tolerances:

Tolerances on the Vital Few X's based on the requirement of Y identified & documented : _____
 Measurement system variation for Y considered in establishing tolerances : _____
Measurement Systems Analysis:
 Valid rationale for method of MSA / no MSA : _____
 MSA conducted for Accuracy / Reproducibility / Repeatability / Linearity (as relevant) : _____
 MSA sample justified : _____
 MSA :- Short-form: __ Test-Retest: __ ANOVA: __ Attribute: __
 In case of MSA failure / correction & revalidation completed : _____

Project Plan & Project Storyboard Update:

Project control sheet / Storyboard updated : _____
 Team meetings and communications are as per project plan : _____
 Mentoring / Escalations are as per plan : _____
 Project findings shared with Champion / Sponsor (Minutes, emails, etc) : _____
 Potential Financial Savings estimated – Validation process initiated : _____

Tools Used:

SCMAPER	Anti-Solution	AHP	Pugh Matrix
Thinking hats	TRIZ Principles	Analogy	Simulation
Benchmarking	Paired T-test	DOE	QFD
Line Balancing	MSA tools	Mixed model map	Process Maps
Brainstorming	Time Study	Brain writing	Others _____

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D-M-A-I-C: CONTROL

Process Improvement:

Changes in level of critical X's proven statistically significant : _____
 Changes in pre vs. post level of Project Y proven statistically significant : _____
 Statistical proof for Project Y meeting / not meeting target present : _____
Data Used – Appropriate sample / sub-grouping used for tests : _____

Process Capability - Improved:

Run Chart & Basic statistics of project Y documented : _____
 Normality check for continuous data : _____
 Subgroup selection justified (Cont. data) : _____
 Spec limits & boundary conditions used correctly : _____
 Both Short-term & overall capability established (Cont. data) : _____
 Improved process capability meets target – else rationale documented & signed off by Champion : _____

Process Control:

Exhaustive risk-assessment done (FMEA), risks mitigated – Digitization / Poke Yoke / EWS, etc : _____
 Control Charts and metrics established correctly for critical X's and Project Y : _____
 Control Chart (for X's) sampling frequency is appropriate for the metric and X's are measured more frequently than Y : _____
 Financial Savings from the project verified & signed-off : _____
 Control plan for improved process signed off by process owner : _____
 New Standard Operating Procedures signed-off by process owner : _____
 Audit plan documented & signed off by process owner : _____

Project Storyboard & Certification:

Project control sheet / Storyboard updated : _____
 Logical flow of problem solving from identification of potential X's to control charts on critical X's : _____
 Project completion as per project plan/rationale for delays documented : _____
 Project Learning documented / Leverage Opportunities identified : _____
 Project ready for certification review? : _____

Tools Used:

Poke Yoke	FMEA	Control Charts	Paired T-test
Chi-Squared	2 Sample T-test	Capability Analysis	Control Plan
Response Plan	Monitoring Plan	Audit Plan	Others _____

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Comments: _____