Lean Six Sigma Project Certification Criteria

Following is an example rating criteria used for DMAIC project certification. For each project, the phases of DMAIC are assessed using the anchored scale outlined. Examples are given to ensure consistency across the rating panels.

## OVERALL RATING SUMMARY

|  |  |
| --- | --- |
| **Score** | **Rating** |
|  4 | Excellent: all areas of project execution demonstrate strong performance. |
|  3 | Good: projects demonstrate Black Belt understands process and tools used; receives feedback in areas that could be improved in future projects. |
|  2 | Rework required: Black Belt must fix project if possible or complete another project to demonstrate command of DMAIC and associated tools. |
|  1 | Fail: Project work does not demonstrate proficiency with methodology or tools. |

**TEAM / LEADERSHIP SKILLS**

 Appropriate involvement of all team members with the project

 All team members involved throughout the improvement, understand the process used for improvement and can lead future improvements on their own.

 Champion involved throughout project

 Consistent communication with key stakeholders throughout the project

 Maintained focus on team goals

 Project planning and management in place to assure that the team meets its goals

 Drives the project to completion on schedule

 Takes responsibility for goals of the team

 Leadership

 Mastery of improvement methods clearly projected

 Positive attitude and high energy

 Productive use of facilitation tools

|  |  |  |
| --- | --- | --- |
| **Score** | **Criteria** | **Example** |
|  4 | All deliverables present and sound. | See above points. |
|  3 | Some elements may be missing, but are added later or ultimately do not have a negative impact on project success or progress. | Project planning or management not clearly documented, but project still completed on schedule. |
|  2 | Most of the work is done for each deliverable, but significant gaps remain which minimise chance for successful, timely completion. | Project completed behind schedule; absence of strong, facilitative leadership. |
|  1 | A key deliverable is not present or significant elements of the deliverable are missing. The project is clearly not ready to progress to the next step. | Team leadership qualities absent; minimal team work; project not adequately completed. |

# DMAIC : Define

 Charter communicates project concept and significance

 Business case clear and relevant

 Problem statement does not contain an implied solution

 Project goal specified

 CTQs are measurable and linked by data to customer needs

 VOC captured and validated

 CTQs identified and prioritised

 Internal / External Customer segments considered

 High level process map drawn and it reflects the “as is” process

 SIPOC components identified and verified

 Start and end points of the process correctly identified

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Score** | **Criteria** | **Example-** Charter | **Example-** CTQs | **Example-** Process map |
|  4 | All deliverables present and sound. | See above points. | See above points. | See above points. |
|  3 | Some elements may be missing, but are added later or ultimately do not have a negative impact on project success or progress. | Minor flaws in one or more elements; milestones not realistic. | VOC does not reflect all customers; CTQs are not prioritised. | All components not clearly identified. |
|  2 | Most of the work is done for each deliverable, but significant gaps remain which minimise chance for successful, timely completion. | Problem statement is a solution; project goals are not aggressive enough; scope is too broad; milestones missing. | VOC 🡪 CTQ translation inaccurate or not based on data; significant customer segments ignored. | Key component not identified (e.g. boundaries not clear or include parts of the process which are beyond project’s scope). |
|  1 | A key deliverable is not present or significant elements of the deliverable are missing. The project is clearly not ready to progress to the next step. | Problem statement, goal statement or scope not specified; team not selected. No sign-off from champion. | CTQs not identified or not focused on customer information. | No process map or map not validated. |

# DMAIC : Measure

 Starting to understand key measures (Y’s and X’s)

 Output measures (Y’s) link to CTQs

 Critical input and process measures (X’s) identified

 Complete data collection plan developed and implemented

 Objectives clearly defined; operational definitions developed; measurement systems validated

 Methods and procedures specified and communicated; sampling plan specified

 Adequate data gathered over representative conditions on output measures and relevant process/input measures

 Current process capability established

 Baseline process variation (centre and spread) is studied in a run chart and a histogram

 Process limits established with the appropriate control chart. Special causes identified and addressed

 Performance standards established based on available data (VOC, technology, benchmarking)

 Defect, unit and opportunity logically defined; process sigma (Zst) or current process yield determined

 Improvement goals stated based on current capability (Shift mean? Reduce variation?)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Score** | **Criteria** | **Example-** Key Measures | **Example-** Data collection plan | **Example**- Capability  |
|  4 | All deliverables present and sound. | See above points. | See above points. | See above points. |
|  3 | Some elements may be missing, but are added later or ultimately do not have a negative impact on project success or progress. | Measures relate to CTQs but are not easily captured. | Data collected without specific purpose; more data collected than needed; plan for data collection not communicated. | Benchmarking not considered to determine performance standards; sigma calculation not correct. |
|  2 | Most of the work is done for each deliverable, but significant gaps remain which minimise chance for successful, timely completion. | Weak tie between measures and CTQs; measures outside bounds of process map; discrete measures chosen when continuous are available. | Inadequate sampling strategy or measurement systems analysis; operational definitions not validated. | Defect definition does not reflect CTQ; opportunity count inflated; baseline data does not represent process fairly. |
|  1 | A key deliverable is not present or significant elements of the deliverable are missing. The project is clearly not ready to progress to the next step. | Measure not related to CTQs; no process or input measures identified. | Clear plan not established; missing operational definitions, data collection forms, or measurement systems analysis. | Baseline capability not established; d, o, u not defined; data not plotted. |

**DMAIC : Analyse**

 All possible causes of variation are identified and prioritised

 List of causes developed

 Causes are quantified and prioritised using data and tool(s) such as the following:

1. Pareto charts, scatter diagrams or regression, stratified histograms, hypothesis testing, design of experiments,
2. detailed process maps, value added / non-value added analysis
3. cause and effect diagrams verified with data

*For each tool used, the following criteria have been met:*

1. *The tool is used appropriately in each situation*
2. *Tool executed correctly (mechanics)*
3. *Logical conclusion drawn from results of tool use*
4. *Subsequent action is logical and based on results obtained from analysis*

 The opportunity for project impact is quantified

 Potential financial benefit from solving problem estimated

 Financial and non-financial impact evaluated

 Problem statement refined if necessary

 Problem statement is refined based on analysis results; problem focused is clarified or tightened

|  |  |  |  |
| --- | --- | --- | --- |
| **Score** | **Criteria** | **Example-** Causes identified/prioritised | **Example-** Quantify opportunity |
|  4 | All deliverables present and sound. | See above points. | See above points. |
|  3 | Some elements may be missing, but are added later or ultimately do not have a negative impact on project success or progress. | Prioritised list developed but some tools used unnecessarily or conclusion drawn was inappropriate (but not critical); may have missed some potential causes. | Financial evaluation solid; non-financial evaluation not comprehensive. |
|  2 | Most of the work is done for each deliverable, but significant gaps remain which minimise chance for successful, timely completion. | Tool misused or conclusion wrong with significant consequences on project; root causes not identified. | Limited analysis performed; missed a significant contribution to impact; included cost avoidance in assessment. |
|  1 | A key deliverable is not present or significant elements of the deliverable are missing. The project is clearly not ready to progress to the next step. | Limited list of causes developed; prioritisation based on anecdotal information only; minimal or no data to support analysis. | Quantification not completed. |

**DMAIC : Improve**

 Root causes are verified (Confirm root causes have been verified with data before generating solutions)

 Potential solutions to address root causes are generated

 A broad list of possible unique and creative solutions is generated to resolve root cause issues

 Solution selected and optimised ***(Refer to Analyse criteria)***

 One or more of the following tools is used to select a solution:

1. Prioritisation matrices, Must vs. Wants analysis, hypothesis testing

 The solution selected permanently addresses the root causes identified in the Analyse phase

 Risk assessment completed to handle unintended consequences of the solution

 Cost benefit analysis completed to determine financial impact of selected solution

 Solution is confirmed and implementation is planned

 The selected solution is tested on a limited scale; preliminary results are documented

 A plan for full scale implementation is developed which addresses the acceptance of the solution

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Score** | **Criteria** | **Example-** Solutions generated | **Example -** Solution optimised/ selected | **Example-** Solution confirmed, implementation planned |
|  4 | All deliverables present and sound. | See above points. | See above points. | See above points. |
|  3 | Some elements may be missing, but are added later or ultimately do not have a negative impact on project success or progress. | Root cause verified with limited data; broad list of solutions generated. | Tools applied with moderate success; risk assessment is not comprehensive. | Solution is confirmed with data in limited area, implementation plan complete. |
|  2 | Most of the work is done for each deliverable, but significant gaps remain which minimise chance for successful, timely completion. | Root cause verification is not based on data; possible solutions generated are all conventional. | Solution addresses defect but does not address root cause; tool execution flawed; risk assessment marginal. | Solution confirmed without data; implementation plan lacking a key component. |
|  1 | A key deliverable is not present or significant elements of the deliverable are missing. The project is clearly not ready to progress to the next step. | No evidence of root cause verification; focus is on a single solution; solutions do not address root cause. | Selection not based on data or analysis; tool used inappropriately; risk assessment not performed. | Solution not confirmed; no plan for implementation. |

**DMAIC : Control**

 Process improvement gains quantified and verified

 Process sigma recalculated over several cycles of the process

 Financial impact quantified and verified. Anticipated improvements realised.

 Control plan for process in place

 Ongoing process management handed off to an appropriate process owner

 Process has been mistake-proofed and improvements robustly designed where possible

 Control charts established for key process and output measures

 Response plan for out of control situations

 Improved process is standardised and documented

 Changes have been fully incorporated in the process

 Updated or new documentation is used to run process

 Project is documented and learning are translated

 A written project summary is available

 Key learnings are translated to other processes

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Score** | **Criteria** | **Example-** Gains verified | **Example-** Control plan | **Example-** Documentation |
|  4 | All deliverables present and sound. | See above points. | See above points. | See above (last 2 bullets). |
|  3 | Some elements may be missing, but are added later or ultimately do not have a negative impact on project success or progress. | Improvement gains verified over only a few cycles. | Process has control charts in place where needed; hand-off complete; some elements of mistake-proofing or robust design incorporated in to process. | Process standardised within business; some translation across Vodafone; project documentation missing some minor components. |
|  2 | Most of the work is done for each deliverable, but significant gaps remain which minimise chance for successful, timely completion. | Improvement gains verified over a single cycle. | Hand-off of plan is incomplete; some key measures not tracked; no mistake-proofing or robust design incorporated. | Process standardised but not followed in business; minimal translation evident; project documentation partially completed. |
|  1 | A key deliverable is not present or significant elements of the deliverable are missing. The project is clearly not ready to progress to the next step. | No verification or verification at a few single points in time. | No plan for hand-off; control charts not in place; missed opportunities for mistake proofing and robust design. | Process not documented or standardised; no translation of learnings; minimal project documentation. |

**DMAIC : Impact of Project Results on Business**

 Project achieved defect reduction goal

 Unintended consequences of the improvement controlled adequately

 Project results are translated to savings/revenue for the business

 Significant savings realised or new revenue gained as a result of this project

 Increase in market share or penetration

 Increased customer retention or loyalty

 Translation of results to other processes or businesses evident

 Project benefits evident in other processes or businesses

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Score** | **Criteria** | **Example- Defect reduction** | **Example- Financial impact** | **Example- Results translated** |
|  4 | All elements (above) achieved and documented. | Defect reduction achieved or exceeded. | Financial impact at or above target for project. | Action taken to translate results across Vodafone. |
|  3 | Strong financial impact and defect reduction, but less than targeted. | Defect reduction significant but below target. | Financial impact good but below target for project. | Action taken to translate results across Vodafone businesses. |
|  2 | Some improvement achieved, but project goals not met.  | Defect reduction marginal/ unintended consequences of improvement not controlled. | Minimal financial impact. | Action taken to translate results within Vodafone business. |
|  1 | Little or no net improvement resulted from project. Unintended consequences have serious impact on business. | Minimal or no defect reduction; unintended consequences of improvement cause new defects. | Cost of improvement is greater than financial benefit. | No action taken to translate results. |