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GABRIEL DANIELS FE

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Plan-Do-Study-Act (PDSA) Explained By Gabriel Daniels PE. Lean Six Sigma Master Black Belt



 PDSA-chart-)Powered By Gabriel Daniels PE. Lean Six Sigma Master Black Belt

Date: 29 Dec 2017 Author: Gabriel Daniels Fe

Plan-Do-Study-Act (PDSA)

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Plan-Do-Study-Act is an iterative, four-stage problem-solving model used for improving a process or carrying out change.

STEP-BY-STEP WALKTHROUGH



Plan

In **Step 1**, you will identify an opportunity for improvement for your PDSA cycle. Let data guide your selection of a topic. Data can be both numerical (like client or program records) and descriptive (like results from customer satisfaction surveys or general staff feedback). Also, you can start thinking about and securing the resources you will need for your PDSA cycle and be getting any necessary approval to start the CQI project.

Ask yourself: What are some areas the program can improve on? What do the data tell us about how well we are doing in those areas?

In **Step 2**, you will identify staff, program participants, community members, and partners who have knowledge of the targeted area so you can assemble your CQI team. The team should further discuss the opportunity for improvement and draft an initial SMART (Specific, Measurable, Achievable, Relevant, and Time-Bound) aim/goal

statement. Teams often find it helpful at this point to assign roles to members (including leader/facilitator, note taker, document manager, and meeting scheduler), create a project timeline, and organize project plans into a summary document, called a team charter.



Figure 2. The Plan-Do-Check-Adjust Cycle - Lean Problem Solving

Ask Yourself: Who can contribute to our team's PDSA cycle, and what will their role in our CQI work be? What is the goal of the PDSA cycle?

In **Step 3**, clarify how the program is currently operating in the area you have identified to improve your PDSA cycle. Consider creating a process map or flow chart to examine how the program operates and look for data and information you can use to establish a baseline (i.e., starting point) to compare to when your PDSA cycle is complete. Before coming up with a solution, ask your team to first think about what is causing the problem to exist. You may find it helpful to create a cause and effect diagram (e.g. fishbone diagram) to explore the root cause of the problem. After creating a list of all the possible reasons the problem exists, ask the team to pick just one that you will try to change your CQI work.





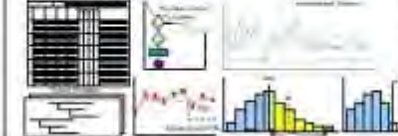
Ask Yourself: What do we know about the area we have chosen to improve? What is the main reason this problem exists?

Step 4 is when the team will brainstorm and collectively think about all the possible solutions to the root cause of the problem. Teams should look to their program model or existing best practices when possible. The team should select a potential solution within its scope of control that could best address the problem.

Ask Yourself: What could we do to improve the challenge we are experiencing?

In **Step 5**, your team should develop a theory for improvement, which is a prediction of what will happen when your team tests the potential solution on a small scale. Your team will also develop a strategy for how you will test your theory for improvement (e.g., who will help, what materials are needed, when it will occur).

Digital Six Sigma DMAIC Improvement Process

1.0 Define Opportunity	Objective Validate or refine the business opportunity and charter, illustrate their business processes, define customer requirements, and prepare themselves to be an effective project team.	Main Activities • Validate/develop Team Charter • Map process • Identify Quick Wins/Non Value Added • Translate VOC/VOB to CTQs/CTPs • Build the team	Potential Tools and Techniques 	Key Deliverables • Team Charter • Project Plan • Process maps • Quick Win Opportunities • CCRs - CTQs CTPs
2.0 Measure Performance	Identify critical measures that are necessary to evaluate the success of meeting critical customer requirements, develop a Measurement Plan to effectively collect data, and establish baseline performance.	• Identify input, process, and output indicators • Develop Measurement Plan & operational definitions • Measurement Systems Analysis • Evaluate baseline performance • Process Control & Capacity		• Input, process, and output indicators • Operational definitions • Measurement Plan • Cause & effect Diagram • Baseline performance
3.0 Analyze Opportunity	Identify and validate the root cause(s) of poor performance. Determine sources of variation and potential failure modes that lead to customer dissatisfaction. (Y=f(Xs))	• Identify potential root causes • Validate root causes • Use statistical tools • Comparative Methods • SOV studies • FMEA • Regression analysis • Control charts		• Results of data analysis • Validated root causes • Potential solutions
4.0 Improve Performance	Identify, evaluate, and select the right improvement solution(s). To develop a change management approach to assist the organization in adapting to the changes introduced through solution implementation.	• Design of Experiments (screening/RSM) • Generate solutions • Evaluate and select solution(s) including benefits • Communicate solution(s) to stakeholders • Prepare Implementation Plan		• Solutions to implement • Implementation Plan • Improvement impacts and benefits
5.0 Control Performance	Implement the solution(s), develop a plan to maintain the gains, identify replication and standardization opportunities, and provide closure to the team effort.	• Implement solution • Verify results of solution • Integrate and manage solution(s) in daily work processes • Identify replication and standardization opportunities • Closure activities		• Process control plan to maintain gains • Solution(s) results • Opportunities for replication and standardization

Ask Yourself: What do we think will happen if we try out a specific potential solution? What do we need to do to get ready for our test?



Do

In **Step 6**, your team will test the improvement theory on a small scale. Remember to document how the test unfolds.

Ask Yourself: Are we carrying out the test as we planned?

Study

In **Step 7**, your team will use the data collected during the “Do” stage to study the results of your test. This process will include comparing results against your baseline data and discussing the team’s overall experience with the project.

Ask Yourself: Did the change we tested result in an improvement?



Act

In **Step 8**, your team will decide what to do with the lessons learned through this PDSA cycle. The team can (1) adopt the change as a standard of practice, (2) test the change under different circumstances through a new PDSA cycle, or (3) abandon the change and try a new solution to the problem.

Ask Yourself: Should we keep the change and apply it more broadly, or do we need more information?

In **Step 9**, your team will work to build on the progress made by this PDSA cycle and make plans for additional cycles.

Ask Yourself: What did we accomplish in this PDSA cycle and how can we keep moving forward?

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