

The scientific method and deming's pdca pdsa cycle

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The Scientific Method and Deming's PDCA/PDSA cycle

1. Designing a product is a process that often uses various methods such as the scientific method and Deming's PDCA/PDSA. There are a number of similarities between the scientific method and Deming's PDCA/PDSA cycle. For instance, the scientific method is centered towards creation of knowledge as the goal. It is also concerned about testing the hypothesis and it relies heavily on the literature that has been published by the other researchers in the same field. On the other hand, Deming's PDCA/PDSA cycle also represents scientific methods to quality improvement. It is also centered on knowledge creation. It is essential to utilise different sources of knowledge when carrying out this exercise. The other similarity between the scientific method and Deming's PDCA/PDSA cycle is that they are concerned with solving the problem identified.

However, the main difference is that the PDCA/PDSA is a continuous improvement cycle. It keeps going and it is comprised of the following steps: plan, do, study, check act then return to planning again in order to redesign the product so as to improve its quality. Scientific method can be applied by an individual while Deming's method can be applied as a team. The team makes periodic fresh starts from a higher level. In case of the scientific method, the completed study can then be published in journals where further research about the same topic can be carried out should any gap exist.

As noted above, the PDCA/PDSA is a continuous improvement cycle. It keeps going and it is comprised of the following steps: plan, do, study, check then act. On the other hand, the DMAIC tactic (define, measure, analyse, improve

and control) is similar to PDCA/PDSA in that they are grounded in the same philosophy- they use data to generate knowledge that can be used to solve a problem. The problem is defined or identified and the steps taken to solve the problem are more or less the same. Control measures are implemented during the process in order to ensure that everything goes according to plan. This helps the parties involved to remain focused such that they can achieve the desired goals. At the final stages of both models, they reflect on what has been learned so as to make sure that the knowledge generated is put to good use with regards to solving the identified problems.

The main difference between the two methods is that DMAIC is comprised of tollgates which represent the milestones between each stage where the senior management will meet to discuss progress on the work being carried out. The DMAIC model is usually ideal for a project which has a definite start and finish. It uses the six sigma for project management and implementation where the control stage is the close or finish stage in the project. There is a tollgate and closure which signals the documentation of the new process. This case is quite different with PDCA/PDSA cycle which is continuous. It goes on and on like a vicious circle where the aim is to continually improve the design of a particular product.

References

NB put the reference of the text book where you obtained the information for the order.