



Deming Wheel (PDCA)

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W. Edwards Deming was one of the architects of the quality revolution which transformed the shape of manufacturing and then service industry in the late 20th century. His pioneering work on how quality could be managed as a system originally developed in the USA but it was in post-war Japan that his ideas were first put into widespread practice. Today the Deming Prize is still one of the highest valued measures of achievement for Japanese businesses. In later years his work was finally recognized and adopted in the USA and worldwide and provides a cornerstone for total quality management.

His core ideas are represented in his list of '14 points for managers' which set out his philosophy for quality management:

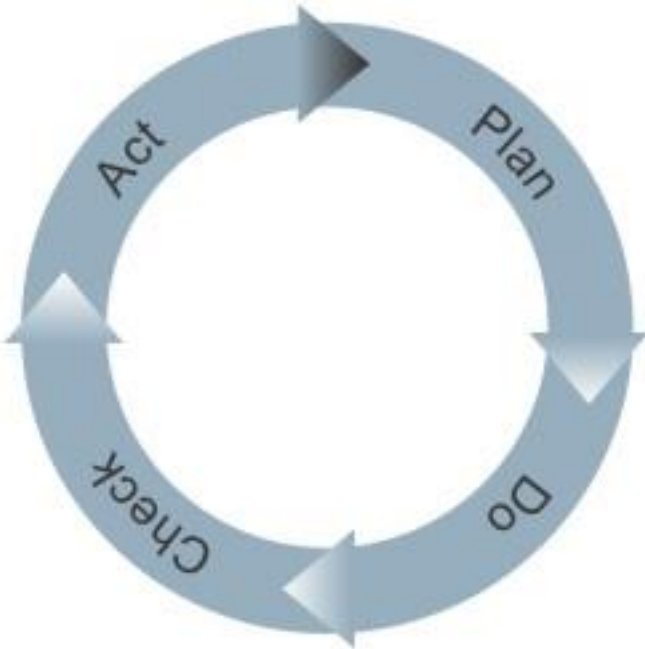
1. Create constancy of purpose for improving products and services.
2. Adopt the new philosophy.
3. Cease dependence on inspection to achieve quality.
4. End the practice of awarding business on price alone; instead, minimize total cost by working with a single supplier.
5. Improve constantly and forever every process for planning, production and service.
6. Institute training on the job.
7. Adopt and institute leadership.
8. Drive out fear.
9. Break down barriers between staff areas.
10. Eliminate slogans, exhortations and targets for the workforce.
11. Eliminate numerical quotas for the workforce and numerical goals for management.
12. Remove barriers that rob people of pride of workmanship, and eliminate the annual rating or merit system.
13. Institute a vigorous program of education and self-improvement for everyone.
14. Put everybody in the company to work accomplishing the transformation.

His early career included working alongside Walter Shewhart in Bell Labs and he adapted Shewhart's cycle of 'plan-do-study-act' to make his own which has become known as the Deming Wheel. This consists of a cycle for continuous improvement based on four phases:

- Plan – identify and analyze the problem
- Do – develop and test a potential solution
- Check – measure how well the solution worked and whether it could be improved further
- Act – implement the solution

It is not a 'one-stop' method but rather a way of continuously challenging and improving; the end of the cycle may often lead to another round of solution development and implementation. For this reason it is a powerful tool in policy deployment where big strategic challenges are broken down into small targets which can be attacked systematically.

Figure 1: The Plan-Do-Check-Act Cycle



Stage in the cycle	Key activities and tools
Plan	Identify problem – it may be important to separate out several continuing causes and find the root cause to target. Tools like process mapping, 'fishbone' (cause and effect diagrams), 5 whys and frequency charts are helpful here
Do	Explore different possible solutions. This could involve brainstorming or other

	approaches. The emphasis is on trying out ideas at this stage
Check	Measure how well (or not) the proposed solution works. If it succeeds then implement it fully but if not then go back and start the cycle again
Act	Implement the chosen solution and ensure that it become part of the new operating procedure. In this way there is a 'ratchet' effect capturing the learning form the cycle and building it in to 'the way we do things around here'.

Using the PDCA approach

This systematic learning and improvement cycle is deceptively simple. It can be applied in any context, manufacturing, service or public sector and offers a powerful tool for establishing a systematic approach to sustained improvement. Some examples can be found in cases of continuous improvement on the Portal.

For more detail on the PDCA wheel see <http://www.mindtools.com/>

Activity

Choose a problem to work on – for example:

1. How to cut costs in a business
2. How to improve customer service
3. How to convince people to adopt a new idea
4. How to 'pitch' a new business idea to some venture capitalists
5. How to increase flexibility in the organization

or pick one of your own.

How would you use the PDCA cycle to help deal with these?