PDCA CONSULTING LTD
THE SCIENTIFIC APPROACH DELIVERING SUSTAINABLE RESULTS

The Value of PDCA

The human brain has a remarkable capacity to make intuitive leaps; to identify connections that aren't immediately obvious. This gives us extraordinary scope - many advances in human development have been borne out of "eureka" moments. Without this capacity we certainly wouldn't have any meaningful or provocative art. Nor, as a species, would we have had the capability to develop our utility at the exponential rates we've seen over recorded history. So intuition is a very powerful and valuable trait. It gives us a degree of richness and diversity that might otherwise be lacking in our world.

Nonetheless, as much as intuition is a strength, in new or changing environments it can also be a serious weakness if it is employed without its close ally - the facts.

- Without supporting facts, a hypothesis created through an intuitive process is hollow. It may be right but, equally, it may be wrong. Who knows?
- Without reference to verifiable data, an individual cannot know for certain that they've understood the true nature of any problem they face.
- Where intuition is habitually used as a shortcut in decision-making situations, the practice can spread - especially when it is viewed as intelligent behaviour or experience, and/or where an intuitive decision delivers spectacular success.

Managers who adopt and foster this culture clearly haven't understood (or are ignoring) the inherent risks of such an approach. If intuitive, "quick and dirty" methodology crystallises and becomes the perceived wisdom, an organisation is likely to encounter potentially-serious problems ahead.

Regardless of how intelligent, intuitive or insightful a thought or idea may be, its legitimacy requires validation with cold, hard facts. It doesn't matter how the notion, hypothesis or problem was identified or conceived, it needs back-up data because only incontrovertible evidence has universal authenticity. Gut feel can be countered, opinions can differ, but facts trump everything.

The Scientific Methodology.

W. Edwards Deming invited managers to rewire their thought processes when he popularised the scientific process of the PDCA cycle (sometimes known as the Deming Cycle, or Shewhart's cycle). The concept of Plan; Do; Check; Act is based on the scientific method which, history records, was developed in the 17th century by Francis Bacon. What he originally set forth as "hypothesis; experiment; evaluation" equates to "plan; do; check" in the PDCA cycle. Deming credits Shewhart with the insight to bring an emphasis on control in the cycle. This led to the

clear notion that, if something is checked, a follow-up confirmation/corrective action is inferred. Hence the addition of the fourth activity in Plan, Do, Check, Act.

This scientific methodology was widely adopted in Japan during the post-war years where Deming consulted extensively and it emerged as a pillar of the Lean philosophy.

The Workplace as a Laboratory.

In essence, every business situation can be viewed as an experiment. The concept is fractal so, depending on the lens used, the "experiments" can be observed in microscopic detail, or from a more-distant position with a wider view. For example, a business strategy can be considered experimentally, and so can a specific quality or service problem.

When considered as an experiment, it's immediately evident that scientific method is the most logical tool for working through a hypothesis, problem, or other situation. In addition, being a fact-based system, it also tends to neutralise personal and emotional obstacles.

In using this approach, the experimental process itself becomes a critical factor for success. If well-designed and well-managed, the insights and conclusions of an experiment can be very powerful. Conversely, a poorly-designed or badly-run experiment begets doubt, confusion, procrastination and obfuscation. Hence there is a strong case for adopting Deming's scientific methodology and promoting its use throughout an organisation. It should become the preferred decision-making, problem-solving technique and, ultimately, a culture – "the way we do things around here".

Plan

Identify the problem/develop the hypothesis. Problem identification is often given only cursory consideration, but it is the single, most important phase of the Deming cycle. The quality of the problem statement, or hypothesis, sets the tone and direction for the rest of the experiment. It involves extensive research to understand the true nature of a problem, not just acceptance of what's initially said. This planning discipline helps enormously when determining if the "presenting problem" or "symptoms" are the real, underlying concern. Establishing the root cause of the problem is a key objective at this point. It may involve several rounds of discussions with a variety of people to truly understand the issue before finalising a robust problem statement or hypothesis.

Analyse the problem. After establishing the problem, there is often an uncontrollable urge to make the intuitive leap to a perceived best solution. It's the job of managers, supervisors and project leaders to prevent this from happening. Problem analysis requires a thorough understanding of current conditions, expected (or target) conditions, and the gap between the two. Only after exhaustive evaluation of the hypothesis or problem should the next phase of the methodology begin. It should be clear that problem analysis can't be conducted in isolation. As with problem identification, problem analysis often requires many conversations in situ with those who are associated with the cause and/or effect.

Do

Develop solutions. This means setting out proposals to reach the future state target; to close the gap identified in the plan stage. If a robust hypothesis or problem statement has been developed and rigorously examined in the previous phase, quality solutions will be relatively easy to develop. Universal agreement on the best way forward is not always easy, but it will be easier if PDCA is properly employed, rather than the traditional "top down" or "expert" management style. When finally selecting and agreeing one particular action, or set of actions, ask "How, where, and when will we know if this solves the problem/confirms the hypothesis?" "What characteristics will the improved condition exhibit?" "Who will measure it?" "How?"
Implement a solution. In other words, the who, what, where, when, how activities need to be triggered. Again, if the methodology has been well executed up to this point, the chosen solution can be deployed with a reasonably high degree of confidence and universal acceptance, but it's important to keep the dialogue going as the solution is implemented.

Check

Evaluate the results. This involves checking to see if outcomes match expectations, and then capturing the lessons learned. Is the new level of performance in line with expectations? Is everyone in agreement with the results? Are the results based on facts, not opinions? Note that evaluation is so much easier and more-readily accepted if the assessment criteria is agreed and designed into the experiment at an early stage.

Act

Standardising the solution. This entails the dissemination of lessons learned, and the implementation of new working practices to capitalise on new opportunities. If the outcome of the experiment has been successful, it's crucial to hold the gains.
If the experiment is partially, or wholly unsuccessful…
Make necessary adjustments to the original plans or actions. This is a crucial step when targets are missed. Provided the process has been inclusive up to now, the adjustments are often easy to identify, explain, and implement. Also, knowing that experiments nearly always produce a degree of variation from expectations, adjustments should be expected. As such, there should be no stigma associated with a review of the original assumptions and criteria.
Perform another iteration of the entire cycle where appropriate. This allows the evaluation of the adjustments to see if the deviation from target is corrected.

Create the right conditions.

Generic PDCA tools and templates are widely available, but if used slavishly they are, at best, limited in their effectiveness. The "A3 sheet" is widely used to document problem solving activities and it has been described as "the business memorandum for the 21st century". There are many examples in the public domain. But in order to use this tool, the scientific approach has first to be understood, and legitimised.

There are two important prerequisites to gaining widespread use and acceptance of PDCA methods. First, the senior management team must walk the talk. It is a "living, breathing" management philosophy, not a catch-all phrase or self-fulfilling prophecy. Second, there must be no adverse consequences for participants in cases where the experiments fail. Provided the scientific methodology is followed, employees must be confident they will not be "blamed" in some way if the expected outcome is not achieved. It's normal for experiments to fail occasionally, and it happens more-frequently in cases where boundaries are stretched and paradigms challenged. When certain of the "no blame" principle, most people become more open, more engaged; and the eventual solutions are far superior to those developed using lesser techniques.

For companies that embed the scientific methodology in their corporate DNA the rewards can be substantial. When everyone is pulling in the same direction, knowing explicitly what is required, and why, organisations can do extraordinary things.

Where could you use PDCA? Contact PDCA Consulting to discuss how we can help you achieve your goals using clear, sustainable methods.

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