Bywater EXCEL

The Plan-Do-Check-Act (PDCA) Cycle:

Is it still a valid tool for ISO 9001?

Plan-Do-Check-Act (PDCA) has been the underpinning principle of the process approach to quality management for many years, yet is it sufficient to drive improvement for today's competitive industry?

In top management's terms, improvement can be defined as the addition of value without added cost; in other words an increase in efficiency.

Historically, the PDCA cycle has been an integral part of the ISO 9001 Quality Management System standard and with the restructuring of ISO 9001:2015 to bring it in line with Annex SL, the PDCA cycle maintains its status within the 2015 version. However, as the new standard was being re-written, initially there were rumblings that the PDCA cycle was no longer required.

So is the PDCA process still a valid and essential tool for continuous improvement to drive an effective QMS? And is there anything new we can tell our customers about PDCA? Probably not! A search on Google will show pages of articles, blogs and posts based on years of research and application.

Has the PDCA cycle become such an intuitive approach, so deeply ingrained into our daily business aspects that it's no longer considered necessary to discuss in detail.....or has it run its course and there are more up-to-date techniques being used to manage continual improvement in competitive business today?

Well, consider that both of these points have an element of truth in them. In today's continually changing market, organisations are looking for choice and options. 'One size fits all' is not necessarily an effective approach, so what other tools and techniques are available to support an organisation's continual improvement programme?

Interestingly, from research conducted by Kovach, Cudney and Elrod (2011), it appears that the older, more established continuous improvement techniques win out over the newer quality tools, when it comes to success in implementing and effectiveness.

So here we focus on how these various tools can help overcome some of the challenges and obstacles some organisations face when implementing improvement initiatives. Some of these quality methodologies and techniques have stood the test of time, whilst others are straining to achieving the expected returns under economic pressures.

Plan-Do-Check-Act

A well known and widely used model for continual improvement commonly referred to as the Deming cycle and first discussed by Walter Shewhart[1] as early as 1939: "The cycle draws its structure from the notion that constant evaluation of management practices - as well as the willingness of management to adopt and disregard unsupported ideas - are keys to the evolution of a successful enterprise." PDCA provides a basic structure for strategic planning, needs analysis, evaluation and continual improvement. Its simplicity is what makes it so effective.

Kaizen

Focused on continuous improvement, Kaizen encourages regular, incremental improvements and is based on small and subtle changes and embraces suggestions from employees throughout the organisation. This system inherently bypasses one of the major stumbling blocks experienced by organisations when implementing quality initiatives – fear of major change. By managing employees' fear of change through an objective of constantly aiming to do things better and finding ways to improve what we do regularly, then "change is accomplished by working with and through the people already employed by the organization" (Jacobsen 2008) and improvement initiatives have a greater chance of long-term success and effectiveness.

FMEA

Failure Mode and Effects Analysis (FMEA) is a powerful technique that enables organisations to improve customer satisfaction and reduce product liability risk by anticipating and preventing defects in design and manufacture. It is commonly understood that FMEA is used during the conceptual design process and continues through the life of the product/service but the FMEA process can also be used as an improvement tool where "continuing risk evaluation and mitigation are part of the continual improvement efforts." (Rufe 2013). In addition, by encouraging a focus on customer satisfaction, FMEA can help to alleviate another risk of failure of improvement initiatives: a lack of focus on customers and their needs.

1. "Walter Shewhart: The Godfather of Total Quality Management,"www.pathmaker.com/resources/leaders/shewart.asp.

Root Cause Analysis

Quality tools are often used to investigate problems, the solutions to which are incorporated into the improvement process. Again, there are a number of tools to support root cause analysis, two of which are:

5 Whys

Developed in the 1930s by Sakichi Toyoda, this technique is ideally used by those with the hands-on experience of the process being reviewed, with the aim of preventing the problem from recurring, rather than necessarily identifying solutions. By asking the question 'why' no less than 5 times, for simple problems, this can be remarkably effective and contribute to the incremental improvement process with positive impacts for both the employee and customer.

Eight Disciplines (8D)

Also known as Global 8D, this method was developed by Ford Motor Company in the late 1980's. It is a structured and analytical approach which can be applied to more complex problems, and enables teams to become more effective and accelerates the process of continuous improvement. The 8D refers to a series or ordered disciplines: D0. Plan; D1. Establish the team; D2. Define the problem; D3. Develop a temporary fix / containment plan; D4. Identify and eliminate root cause(s); D5. Identify and verify the solution; D6. Implement a permanent solution; D7. Prevent the problem from recurring; D8. Celebrate team success.

SPC

Statistical Process Control is a data-driven methodology for measuring and controlling quality during manufacturing processes which can be used to identify variations in the process and enable improvements and prevent defects occurring. Taking a more scientific analysis approach, the use of control charts – developed again by Walter Shewhart - is becoming more widespread and used as a component of quality improvement initiatives such as Six Sigma.

Six Sigma

Developed in the 1980's by Motorola, Six Sigma has been embraced with enthusiasm by many companies over the last 10-20 years. Oakland (2003) suggested that "six sigma has been hailed as the saviour to generate real business performance improvement". However, it seems the value placed on those who are responsible for six sigma programmes is weakened in times of economic downturn. Reports of Six Sigma initiatives failing to produce the desired results and expected return on investment are impacting the motivation for these initiatives and enthusiasm is dwindling fast. Admittedly, much of the research into the success of Six Sigma programmes has found fault with the implementation and management of the improvement programmes rather than with the concept of the process itself but economic pressures are taking their toll on the financial returns – and thus commitment to - these projects.

Process Mapping to Value Stream Mapping

Process mapping to the more advanced and complex value stream mapping are methodical and detail-oriented approaches to identifying and eliminating waste in the forms of time and resources and highlighting opportunities for improvement. As with Six Sigma though, there can be high costs associated with developing the expertise and skills of the team members selected to develop comprehensive value stream maps. To gain the financial benefits that can be achieved through process mapping, organisations need to be clear as to the measurements required to determine improvement priorities and performance success criteria and that the tools are applied to appropriate situations.

So perhaps PDCA has a right to be explicitly referenced in ISO 9001:2015, and it certainly should be on the minds of any quality professional or business improvement leader, the impact and usefulness of the model being as important and relevant now in the 21st Century as it was when Deming championed the concept in Japan in the 1950s. Though we need to bear in mind also that there are other, just as relevant and useful quality management improvement tools available, enabling organisations a greater breadth of choice of tools and techniques to apply to their continuous improvement strategies.

However, in the end, the success of any of these improvement initiatives boils down to:

1. Assigning a skilled and confident team with a motivated leader;
2. Choosing the most appropriate tools for your situation – if the tool is useful, use it; and
3. Providing long-term top management commitment which can be sustained through economic pressures.

Not an easy challenge to say the least but as Albert Einstein said "In the middle of every difficulty lies an opportunity."

Over the years many initiatives have come to the fore and some of the basic tools that have been developed by the Quality Greats have been modified, fine-tuned or given new titles but the concepts are the same and are still relevant today. So stripping away the bureaucracy and keeping things simple, concentrating on the basics on which to build improvement, can often be the most effective strategy and may lead to the most impactful results in the long term.

BywaterExcel offers training courses exploring the practical application of a number of these improvement tools:

- ✓ FMEA
- ✓ Problem Solving Tools & Techniques – 5 Whys & FTA
- ✓ Practical Problem Solving - Root Cause Analysis & 8D/G8D
- ✓ SPC
- ✓ Process Mapping

For further details of these training courses, please call our Training team on 0333 123 9001 or email us at training@bywaterexcel.co.uk.