

The Five Steps of Six Sigma

There are five high level steps in the application of six sigma, commonly known as the DMAIC process:

Define

This phase is to gain an understanding and clarify the goals and value of the project. Project champions are chosen, cross-functional teams formed and a charter is created. The team also use the tools necessary to assess the magnitude of the value of the opportunity in a given value stream, the resources required, and a design of the problem solving process and the creation of a high level map of the current process.

Measure

At this stage an assumption is made that the project has been approved and ratified by the champion. During this stage members of the team start to gather data on the problem. Here the team will primarily use data collection tools, Process Mapping, Pareto Analysis and Run Charts etc. Teams who often work on non-manufacturing processes are quite often surprised at how much they gain by completing the measure stage because their processes have never been mapped or studied with data.

Analyse

The team examines its data and process maps to characterise the nature and extent of the defect. The tools help the team to pinpoint the time delays or the defects and define the tools in priority order. This detailed knowledge about the problem lays the groundwork for finding improvements (in the next phase) that will address the root causes of the poor sigma performance.

Improve

This phase applies powerful tool sets to eliminate defects in both quality and process velocity (lead-time and on time delivery).

Control

When the process or product has achieved the required quality level, the tools of the control phase are utilised to lock in the benefits, some of the tools such as Poke Yoke create a monitoring, gauging, and feedback system to instantly detect and correct trends and to shut down the process if necessary.¹

Establishing the Vision

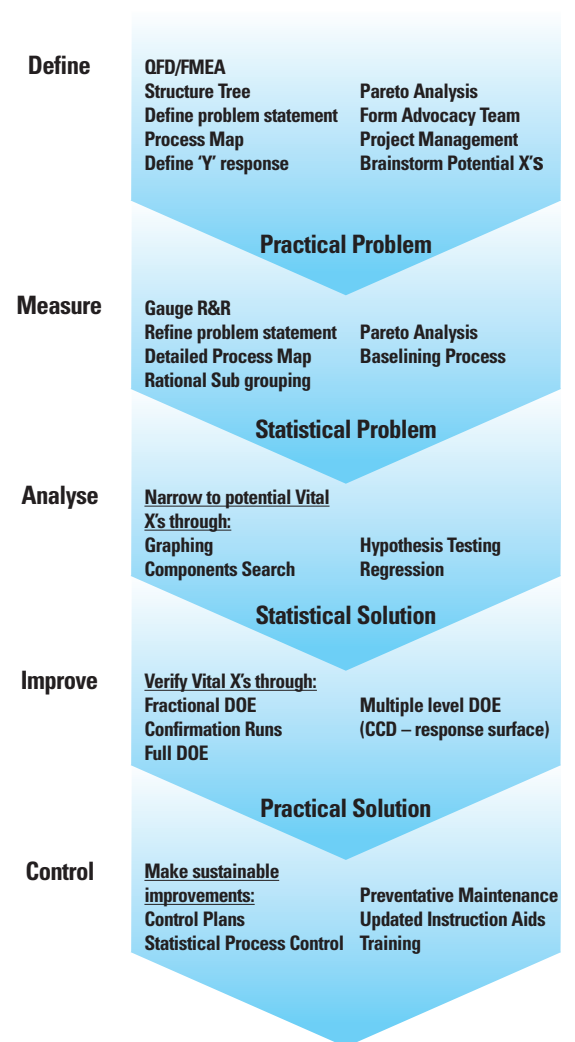
Many organisations attempt to improve products and services with numerous small incremental changes (tweaks) to their current processes; however, changes are rarely documented and the associated results are not recorded.

Substantial sustainable results are rarely achieved with this half-hearted method of change. When employees in this type of organisational culture hear of a new initiative such as six sigma, they wonder what will be different.

As a programme or initiative six sigma risks becoming the “flavour of the month” and will not capture the support necessary to achieve a large return on investment in training. With this approach, employees may end up with an impression that six sigma is a programme very similar to Total Quality Management (TQM) and other quality programmes, which may have experienced limited success within organisations.

One of the very first actions associated with establishing a six-sigma implementation and to avoid the philosophy from being interpreted as a flavour of the month is to gain CEO engagement and business integration planning making sure that both elements are focussed at highest levels within the organisation. At this stage this clearly means that only a small

The Six Sigma Process



¹ Source GDA Introduction to Six Sigma Black Belt Training

The Five Steps of Six Sigma

number of individuals have been involved; the CEO, executives, a few senior level managers, the corporate champion, and maybe an external consultant or change agent.

You cannot achieve six sigma objectives if only a handful of people are going to be involved in the overall effort. Senior Managers will have to come off the sidelines and actively join the venture by carefully selecting some of their key staff to become full time six sigma resources and by ensuring that the translation of corporate objectives and strategies into value creating six sigma projects.

Many managers and other employees are likely to approach six sigma with some scepticism as previous other quality initiatives may have failed. Therefore, it is extremely unlikely that converting sceptics into six sigma advocates is going to be easy with just a signed letter from the CEO.

Most changes in organisations occur through evolution, six sigma is a change but evolution alone will not ensure its success, it will require an element of revolution within the working environment. A revolutionary event typically includes a number of elements, each with a particular purpose, below are just five elements:-

(3) Source Six Sigma for Everyone George Eckes

1. CEO Presentation, this can demonstrate personal leadership, commitment to the cause and it clearly establishes the “burning platform” issue that affects shareholder value.
2. Design & Quality team presentation, which presets a significant view of how the organisation will look when the process efficiency and quality improvements are quickly increasing shareholder value.

3. Case Studies, from a trusted outsider from credible and experienced organisations, to provide evidence that the ideas work in practical and real situations.
4. Experiment, so employees can experience what its like to improve quality, reduce cycle time, improve costs and understand their own contribution.
5. Launch preparations, discussions that map the way for transition of the revolution into ongoing work of six sigma, ensuring six sigma is business as usual.

Scoping a Six sigma Project

Define Stage and the tactics employed.

The first steps in a successful project are to ensure there is a focus on a real business issue. The issue could be costing the organisation money today (late deliveries, lost sales) or proactively could be trying to prevent future issues (potential supplier change, new product launch).

There are several methods that can be used to scope a six-sigma project, but are not limited to reviewing:

- Process mapping with Rolled Throughput Yield information
- Six sigma project hopper
- Purchasing/CTQ
- Cost of quality, information from Finance
- Quality information from customer satisfaction data
- Product or Service reliability

Once the project area has been identified the next steps are to:

- Define an advocacy team to work alongside you or the project
- Further define the issue in a problem statement
- Review financial guidelines for defining project benefits.

Key Point: A well-defined problem is the first step in a successful project