

Basics of A3 Thinking (problem-solving process)

A3 Thinking is a rigorous, methodical, step-by-step approach to solving problems and improving processes. Wherever there is a gap between current performance and desired performance, we can apply structured problem-solving to close the gap. We can use an A3 Report to plan and document our progress, and to communicate this. When we use an A3 Report we should try to use this as the main or only tool for communicating. The following notes describe how to apply this "A3 Thinking" or problem-solving approach.

1. Make sure that everyone (the team) fully understands, and agrees on, the problem to be solved

Effective problem-solving starts with an agreed statement of the current situation (the "problem definition"). The team needs to understand and quantify exactly what's happening, and to write this down. A good problem definition is a bit like the first paragraph in a news story - it tells us what, when, who, why, where, how. Although this activity provides the foundation for everything that follows, in practice it's sometimes not given adequate attention. Teams are often keen to make assumptions at this stage and to rush straight into the next stage. Difficult though it might be, taking the time now to really understand and agree on the true problem can save countless hours of wasted effort and frustration further down the line!

2. Describe "the Gap"

Once we fully understand our current performance (the "current state" or "as is" situation), we go on to define the gap between current performance and desired performance (the "future state" or "to be" situation). This gap might not represent a "problem" in the normal sense of the word, but it does represent any opportunity to improve on the current state.

3. Set a Goal (sometimes called a Goal Statement or Target)

Once we understand the "gap" we can use SMART objectives to set a target for closing the gap:

Specific - be clear, concise and unambiguous.

Measurable - specify what will be measured and how (if there are concerns about the capability of our measurement systems then consider a Six Sigma approach and perform a Measurement Systems Analysis or "Gauge R+R" assessment).

Achievable - is it feasible / likely / possible to achieve the target results within the constraints

Relevant - are we sure that achieving the target will solve the root cause of the problem

Timescaled - by when do we need to achieve the target? Do we need to define a series of stages or milestones? Have we diarised follow-up checks and actions (a 30-day follow-up is commonly used, sometimes called a "sunset meeting")?

4. Contain the problem

Usually this will involve notifying the (potential) customer / end user of the scale and scope of the problem, and implementing immediate short-term measures to isolate the problem, to limit the consequences and to prevent the situation from spreading or worsening.

In a production environment this might include quarantining a batch of products and/or implementing 100% inspection, and/or conducting a product recall.

5. Find the Root Cause(s)

The only way to achieve a permanent solution is to get back to the root cause of the problem and fix it. Often we'll be faced with multiple possible causes and symptoms - lots of opinions, not much fact and lots of noise. We need to find out - based on facts and evidence - what is the original source of the problem and where in the process it occurs. Fortunately, there are lots of tools that we can choose from (including "the seven quality tools"), to help us. Fishbone (Ishikawa) diagrams can help prompt us to consider possible types of cause (typical categories include "Men, Materials, Methods, Machines, Management, Environment"). Repeatedly asking the question "Why" (the "Five Why's?" technique) can help us get right back to the underlying root cause. We also need to make sure that there's a genuine cause and effect relationship, not just a correlation between two independent variables.

6. Plan to Improve

What changes will we make, and how? How will we manage the project?

Naturally, we'll use A3 Reporting to manage our improvement activities and to communicate progress! However, here are a few other things you might want to consider:

As a minimum, we need to identify what actions are required, who is responsible and when they will be done (What, Who, When). Larger projects will require effective project management - perhaps an up to date Gantt Chart and possibly the use of project management software and if required a project management methodology like PrinceII.

7 Check, Measure and Monitor

Regular monitoring and communication are essential. Setting milestones and perhaps "Go / No Go Gates" can all help to ensure the right outcome at the right time. As a minimum, agree a follow-up date when the team will review progress.

Where the improvement activity relates to a core process or an activity that is regularly repeated we might want to consider opportunities for visual management in the workplace (at the "Gemba"). So for example in addition to our A3 Report, we may choose to have a "3C" whiteboard at the point of cause (the "Gemba"), displaying the Concern, Cause and Countermeasure. We could extend this to include a concise summary of Concern - Containment - Cause - Countermeasure - Check. We could then use a simple traffic light (RAG - Red, Amber, Green) system to make sure that we continue to keep everything on track.

8 Sustain and Spread

"Lock in" the improvements - standardise, apply "One Best Way", (re-)train. Also look for opportunities to spread best practice - can we apply the improvements to other areas of the business? (Often called "read-across" or "yokoten").

9 Recognise the Team / Celebrate Success

Find an appropriate way to recognise the team's efforts - publicise the success, ask the process "customer" to describe the benefits to them, and take some time out to celebrate the success.