Continuous Improvement Toolkit

A3 THINKING

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As a leader, a big part of your job is to solve problems as they come up.
There are many approaches and tools that can help in the area of problem solving which is the driving force behind continuous improvement.

They range from the more complex Six Sigma methodologies to the simple A3 thinking approach.
A3 THINKING

A3 thinking is a logical and structured approach for problem solving and continuous improvement.

Can be used for most kinds of problems and in any part of the business.
A3 THINKING

Adopted by Lean organizations around the world and developed as part of the Toyota Production System.

Widely used by lean manufacturing practitioners.
A3 THINKING

Provides a system for planning and problem solving, and at the same time develops and maintains a culture for continuous improvement.

The power of the A3 approach lies in the systematic and structured method it takes to solve problems.
Although it appears to be a step-by-step process, A3 is built around the **PDCA** management philosophy.

The A3 process usually contains **multiple stages**, and the number of stages may vary depending on the preference of the company.
A3 THINKING

Relies on the principle that it is much better to address the real **root-cause** rather than trying to find a solution.

It’s important not to jump to the solution when solving a problem as it is likely to be less effective.
A3 THINKING

It supports use data to truly understand the problem and implement the best corrective actions and countermeasures.

Data can help to understand the current state and will help to determine whether the selected countermeasures were effective or not.
A3 THINKING

A3 is the practice of getting the problem, analysis, countermeasures and action plan written on a single sheet of paper.

It provides a concise summary of the project and considered a good storytelling tool to communicate any project.
The name A3 is derived from the international-sized A3 paper.
A3 THINKING

You don’t need a special software or computer skills to use the A3 approach.

You may use ready made A3 templates or just a pencil and an eraser as you will need to erase and rewrite several times.
The flexibility of the A3 approach makes it an **ideal tool** for many other applications such as planning, decision making and innovating.

- Deciding which supplier to select
- Planning to improve customer satisfaction
- Innovating a new product development
On of the characteristics of the A3 approach is that it does not get into specific details, so you don't get overwhelmed with details you don't need.
It helps to solve problems at **all levels** of the company from strategic to operational.

Leaders should ensure the **alignment** from the top all the way to the bottom.
A3 thinking is not just a problem-solving or a planning tool.

The development of a continuous improvement culture is at the core of A3 thinking.
The A3 report is not intended to be an individual exercise.

It has become one of the most popular lean tools today where people and teams work together to solve problems, share results and learn from each other.
A3 THINKING

It requires the effort of a dedicated team who should use the tool to improve and collaborate.

It allows to deal with problem-solving issues through simple structuring, good collaboration, and active communication.
A3 thinking is a way of structuring and sharing knowledge that enables teams to practice **scientific thinking** as a way of discovering and learning together.
### A3 THINKING

**BENEFITS**

<table>
<thead>
<tr>
<th>01</th>
<th>02</th>
<th>03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provides a structured and consistent approach to the improvement process</td>
<td>Helps the team to gain deeper insight into problems</td>
<td>Allows people to see problems through the same lens</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>04</th>
<th>05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helps closing the gap between planning and doing</td>
<td>Promotes collaboration and knowledge sharing and encourages learning and continuous improvement on every organizational level</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>06</th>
<th>07</th>
<th>08</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encourages root cause analysis and the use of data</td>
<td>Encourages commitment to common goals and strengthens the levels of responsibility</td>
<td>Empowers people to develop their critical thinking</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provides concise updates and a snapshot of the project health</td>
</tr>
</tbody>
</table>
An A3 process is often managed by an individual who should own and maintain the A3 report.

He/she should drive the process and encourage team participation.
He/she will **draw up** the A3 report with the support and input of the team.

All feedback and ideas from the **A3 thinking sessions** should be integrated into the A3 report.
A3 THINKING

Other Key Individuals

<table>
<thead>
<tr>
<th>Project owner</th>
<th>Process owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note taker</td>
<td>Champion</td>
</tr>
</tbody>
</table>
A3 THINKING

Make sure you involve the **concerned people** so that they can help and contribute to the project.

Other **stakeholders** may have interest in the outcome of the A3 project.
A champion is a more senior leader who works directly with executives.

<table>
<thead>
<tr>
<th>The driving force behind the implementation</th>
<th>Ensures the availability of resources</th>
<th>Participates in scoping, reviews and evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provides recommendations</td>
<td>Helps overcome roadblocks</td>
<td>Being accountable for results</td>
</tr>
</tbody>
</table>
A3 thinking provides an effective way to bring together many of the problem-solving tools into one place.
Make sure you use **visuals and graphics** in the A3 report. They take less space and are more effective than text in communicating ideas or illustrating points.
A3 THINKING

It is important to utilize a **system** to allow A3 reports to be shared between teams and departments.
How to Implement A3 Problem Solving

- The A3 process usually contains multiple stages.
- The exact number of stages is not what matters but rather having a structured approach for problem-solving.

**A3 REPORT**

1.  
2.  
3.  
4.  
5.  
6.  
7.  

**A3 REPORT**

1. Problem Definition
2. Cause Analysis
3. Action Plan
4. Results

A3 seven stages model

A3 four stages model
A3 THINKING

How to Implement

A3 thinking process focuses on developing understanding of the current situation and where you would like to be before thinking about the solution.
How to Implement

One of the most common models is the seven stages model.
A3 THINKING

How to Implement – Background

The first step is to identify the business reason for choosing this problem or opportunity.

In this stage, you need to identify the gap in performance and the extent of the problem. Other useful information: where does it happen, how often, and if there is a pattern or trend.

You may use graphs or charts to show the facts visually.
A3 THINKING

How to Implement – Background

Remember that each A3 report should be focused on only **ONE** specific problem or opportunity.
A3 THINKING

How to Implement – Current Situation

The purpose of this stage is to document the current state of the problem.

You may need to refer to the process map to enhance your understanding of any process.

Sometimes you need to go to the Gemba to truly understand the current situation.

The problem statements should be agreed upon by the team members.

The problem statement can be refined to reflect any new learning that takes place.
<table>
<thead>
<tr>
<th>Problem Statement</th>
<th>The problem is the gap between the intended purpose and actual usage</th>
<th>Indicate mainly what is being affected and where it is occurring (WHAT &amp; WHERE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>INSIGHTS</td>
<td>It is sometimes written in the following format:</td>
<td>You can use the 5W2H to further enhance your knowledge of the problem</td>
</tr>
<tr>
<td></td>
<td>• The problem of...</td>
<td>Should be brief and specific</td>
</tr>
<tr>
<td></td>
<td>• is affecting...</td>
<td>Should be supported with data</td>
</tr>
<tr>
<td></td>
<td>• the impact of which is...</td>
<td>There is no right or wrong way of writing a problem statement</td>
</tr>
<tr>
<td></td>
<td>Should not Include background information or goals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Should not discuss the causes or solutions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Should be supported with data</td>
<td></td>
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</tbody>
</table>
How to Implement – Current Situation

Example of a PROBLEM statement

The manual oil refilling process using drums in the forming machines in line #4 make it difficult to control oil losses which may reach more than 4% per drum.
How to Implement – Current Situation

Problem Categories

- Quality
- Waste
- Cost
- Efficiency
- Delivery
- Health and safety
- Moral
- Customer satisfaction
The purpose of this stage is to define the desired future state and goals:

- Clearly identify the expected benefits from solving the problem and implementing the solution.
- Clearly identify the key metrics that will help measure the success of the project.
- Clearly define the scope of the project – what is involved and what is not.
<table>
<thead>
<tr>
<th><strong>A3 THINKING</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal Statement</strong></td>
</tr>
<tr>
<td>Should clearly define the purpose of the project</td>
</tr>
<tr>
<td>Should respond to the problem statement</td>
</tr>
<tr>
<td>Should be brief and specific</td>
</tr>
<tr>
<td><strong>INSIGHTS</strong></td>
</tr>
<tr>
<td>Includes mainly how much improvement needed and by when</td>
</tr>
<tr>
<td>Should be agreed by all participants</td>
</tr>
<tr>
<td>It is often written in the following format: Improve <em>(primary metric)</em> from <em>(baseline performance)</em> to <em>(desired future performance)</em> by <em>(desired date of completion)</em></td>
</tr>
<tr>
<td>Should start with a verb</td>
</tr>
<tr>
<td>Should have a measurable target</td>
</tr>
<tr>
<td>Avoid using technical language when writing a goal statement</td>
</tr>
<tr>
<td>Avoid suggesting or assuming a solution</td>
</tr>
</tbody>
</table>
Example of a GOAL statement

Reduce oil losses of the manual refilling process of the forming machines in line #4 to less than 1% per drum by the 30th of October
How to Implement – **Analysis**

The purpose of this stage is to dig into the problem and understand why it’s happening.

The aim is to reach to the root causes which can then lead to effective countermeasures.

The most common two tools that are used in this stage are 5 Whys and Fishbone Analysis.

Root cause analysis may be complex and requires more advanced statistical tools.
A3 THINKING

How to Implement – Analysis

Avoid jumping to the solution without having a deep understanding of the problem

Once the problem has been identified, it's time to find out a solution to the problem
How to Implement – **Countermeasures**

Countermeasures are the actions to be taken to eliminate root causes or reduce their effects.

A solution is a set of countermeasures designed to resolve the identified root causes.

Brainstorm and evaluate possible countermeasures based on the analysis conducted earlier.

Cost, difficulty and time should also be assessed before deciding on which one to implement.

This stage also involves finding any needed quick wins, solving urgent issues and pilot testing.
To achieve the target, develop a workable plan to implement the countermeasures. The implementation plan consists mainly of the activity list, owners, and start and due dates. Other information can be included such as the expenses, resources, and the status of activities. A more detailed implementation plan could be attached to the A3 report. Gantt charts are great ways to manage implementation plans very simply and easily.
How to Implement – *Implementation Plan*

Once the action plan is **completed**, the team should begin working on the action items to implement the countermeasures.

A plan is useless without implementation

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INSIGHTS

Discuss the implementation plan with all the affected parties and refine it as needed.

A dedicated project manager should be assigned to the project.

People need to have time aside from their work to focus on their action items.

Regular meetings should be held to oversee the progress and resolve project issues.
How to Implement – **Follow-up**

The final stage allows to evaluate the implemented plan and the achievement of outcomes

Follow-up actions are important to ensure the benefits continue beyond the life of the project

Changes and adaptations should be implemented as needed

Controls measures should be in place to sustain the benefits (e.g., SOPs, mistake proofing, regular audits, SPC charts, and visual controls)
Constantly **update** the A3 report based on the progress and as new information becomes available.
A3 THINKING

A3 Template Example

**A3 REPORT**

**PROJECT TITLE:**

1. **Background:**
   Business case – extent of the problem –

2. **Current Situation:**
   Problem statement – process map – Gemba –

3. **Target:**
   Future state – expected benefits – scope – metrics –

4. **Analysis:**
   5 Whys – fishbone diagram – RCA –

5. **Countermeasures:**
   Possible solutions – quick wins – pilot testing –

6. **Implementation Plan:**
   List of activities
   Owners – start and due dates – resources
   Obtain approvals
   Implement the plan

7. **Follow-Up:**
   Control measures – SOPs – continuous improvement –

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This is where the problem is identified and analyzed

This is where possible solutions are identified, and an action plan is prepared & implemented

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**A3 REPORT**

<table>
<thead>
<tr>
<th>PROJECT TITLE:</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>1. Background:</th>
<th>5. Countermeasures:</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the extent of the problem?</td>
<td>What are possible countermeasures for the problem?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Current Situation:</th>
<th>6. Implementation Plan:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where do things stand today?</td>
<td>What activities will be required? Who will be responsible for each activity? When? What resources and support will be required?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Target:</th>
<th>7. Follow-Up:</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is desired outcome you want to achieve?</td>
<td>When will the progress be reviewed and by whom?</td>
</tr>
</tbody>
</table>

| 4. Analysis: | |
|--------------| |
| What are the root causes of the problem? | |

**Useful Questions**
A3 THINKING

Other information can be displayed on the A3 report

<table>
<thead>
<tr>
<th>A3 REPORT</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROJECT TITLE:</td>
</tr>
<tr>
<td>PROCESS NAME:</td>
</tr>
<tr>
<td>KEY METRICS:</td>
</tr>
<tr>
<td>1-</td>
</tr>
<tr>
<td>2-</td>
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<tr>
<td>3-</td>
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<td>4-</td>
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<td>5-</td>
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<tr>
<td>6-</td>
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<tr>
<td>7-</td>
</tr>
<tr>
<td>START DATE:</td>
</tr>
<tr>
<td>ESTIMATED COMPLETION DATE:</td>
</tr>
<tr>
<td>PROJECT TEAM:</td>
</tr>
</tbody>
</table>
A3 THINKING

Further Information
A3 thinking is considered to be the **practical form** of the PDCA model

<table>
<thead>
<tr>
<th>Plan</th>
<th>Background</th>
<th>Current situation</th>
<th>Target</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do</td>
<td>Develop and test <strong>countermeasures</strong></td>
<td>Quick wins and urgent issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check</td>
<td>Check the effectiveness of the countermeasures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Act</td>
<td><strong>Implementation plan</strong></td>
<td><strong>Follow-up</strong></td>
<td>Standardize</td>
<td>Report &amp; Share</td>
</tr>
</tbody>
</table>
A3 THINKING

Further Information

Detailed documents can be attached to the A3 report.

- Graphics and drawings
- Technical documents
- Detailed plans
- Team activity documents
- Before and after photos
- Performance reports
- Advanced statistical analysis
- Lessons learned
Further Information

Remember, avoid viewing the people as the problem.