

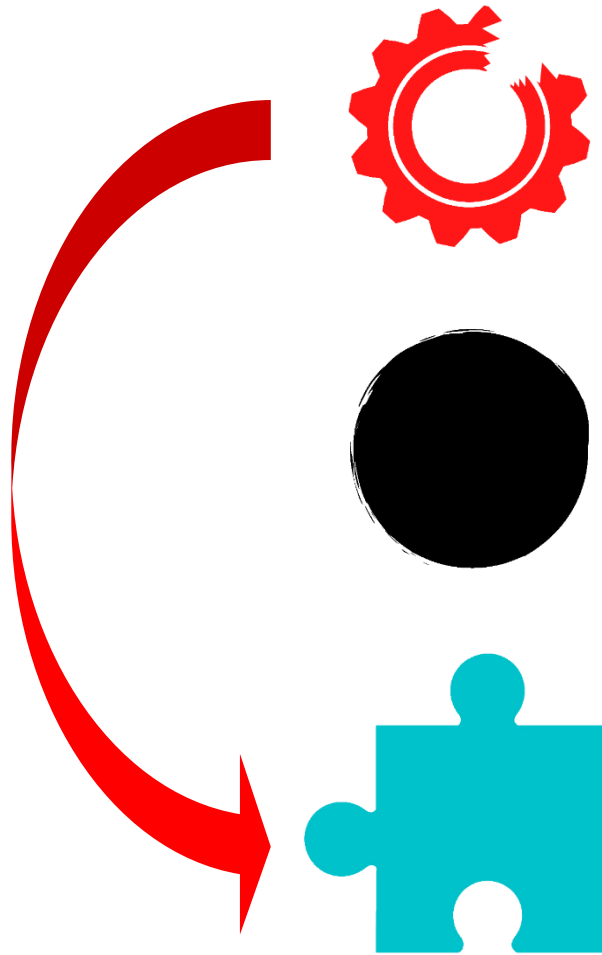


A3 Problem Solving Webinar

Matthew Scott & Kenneth Wisinski

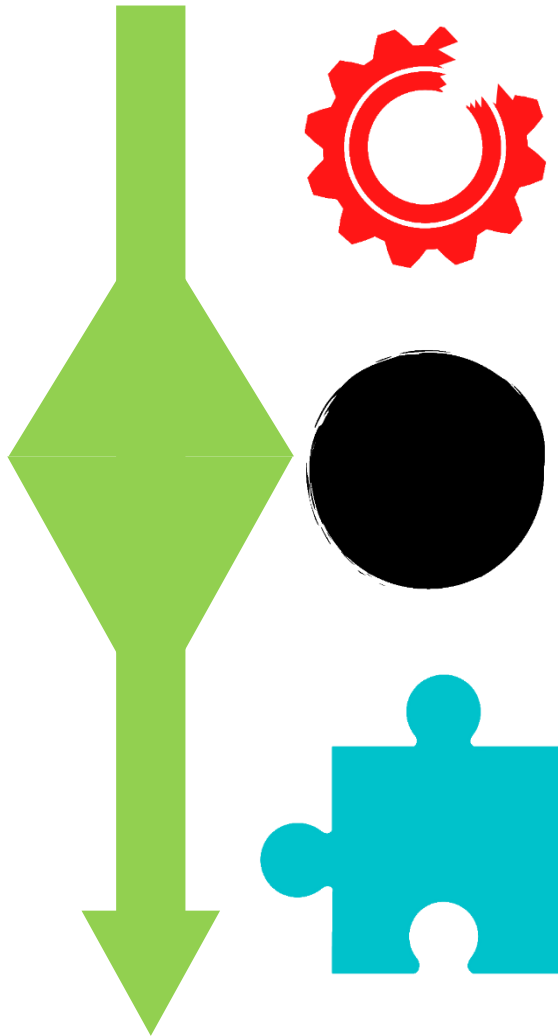
What is your experience with A3 Problem Solving?

Mentality of Problem Solving



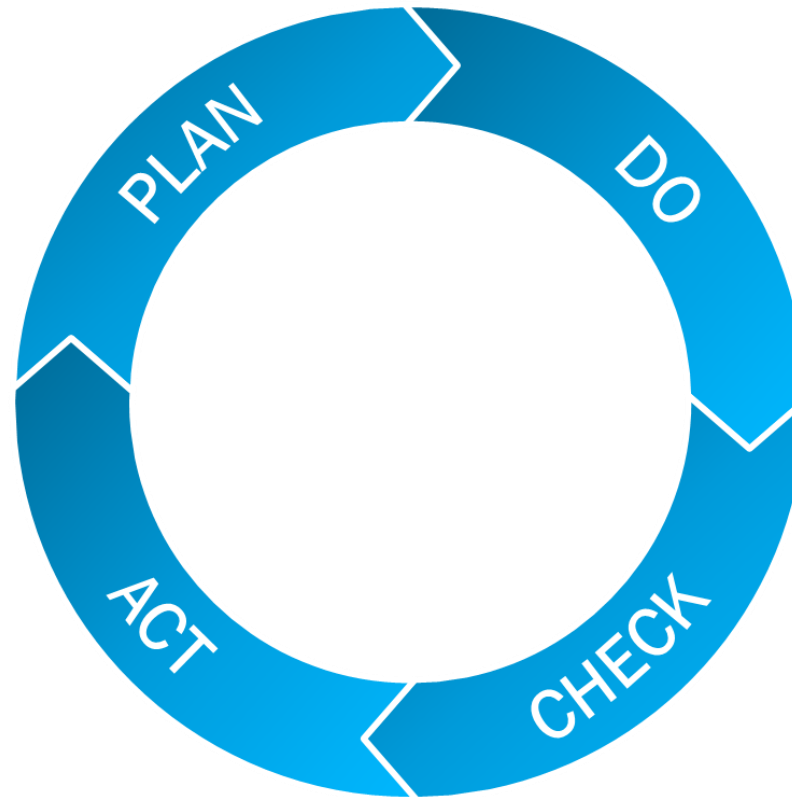
- ▶ Perceived Problem / Assumption
- ▶ Facts
- ▶ Solution

Mentality of A3 Problem Solving

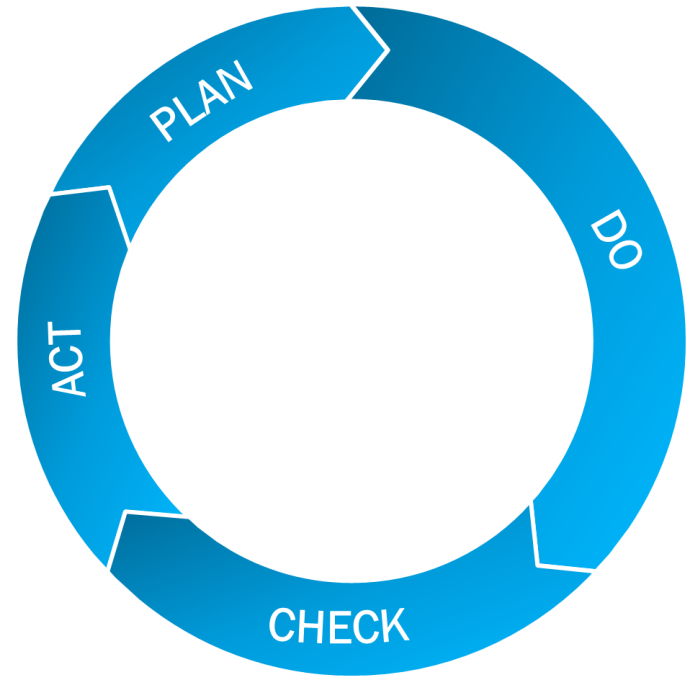
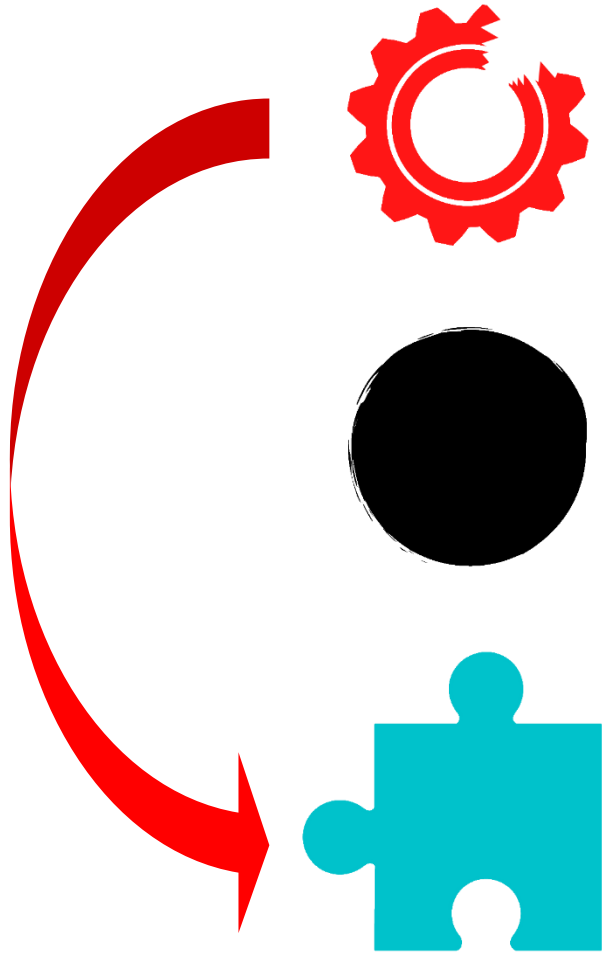


- ▶ Perceived Problem / Assumption
- ▶ Facts
- ▶ Solution

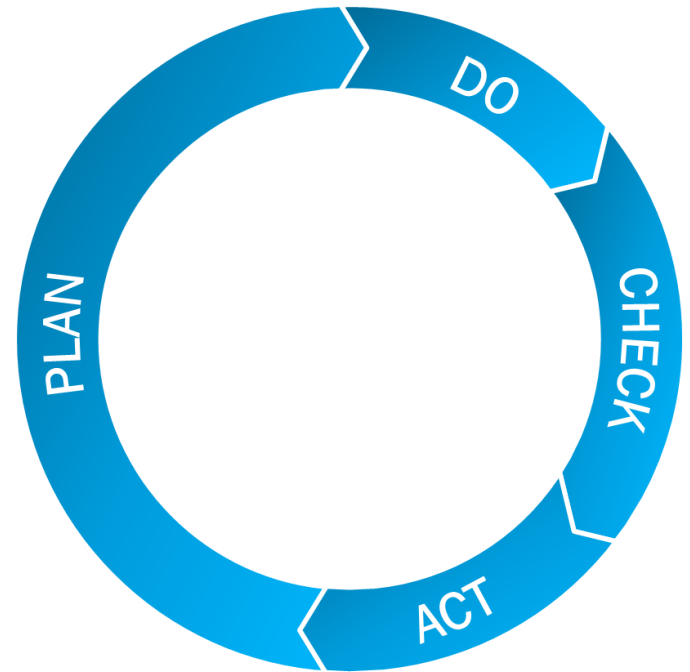
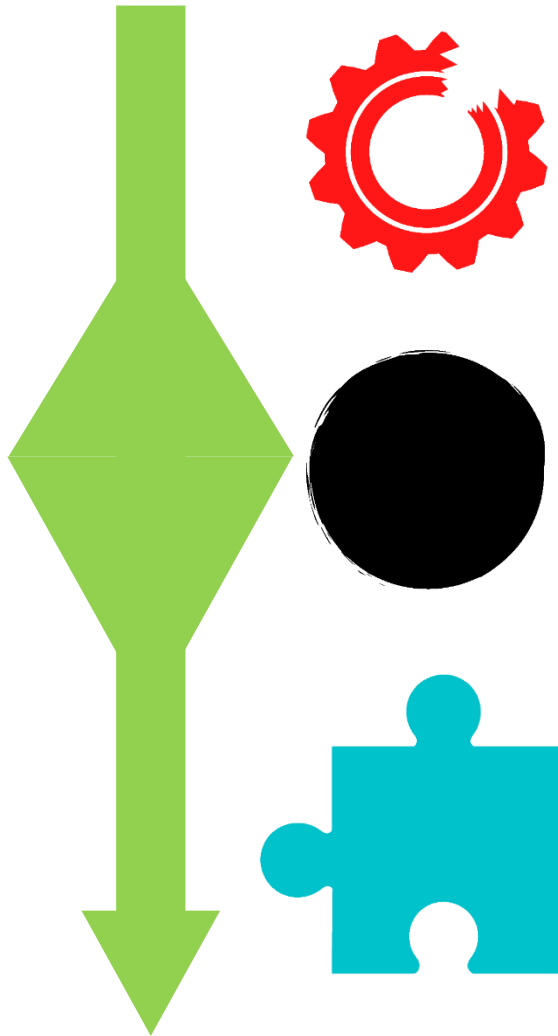
Basis of A3, PDCA – Deming Cycle



PDCA Common Usage



PDCA – A3 Mentality



How often do you jump to solutions whilst problem solving?

A3 Methodology

Background	
<i>Why you are talking about it.</i>	
- <i>What is the business reason for choosing this issue?</i>	

Current Conditions	
<i>Where things stand today.</i>	
- <i>What's the problem with that, with where we stand?</i>	
- <i>What is the actual symptom that the business feels that requires action?</i>	
<i>Show visually – pareto charts, graphs, drawings, maps, etc.</i>	

Target/Goal(s)	
<i>The specific outcome required for the business.</i>	
- <i>What is the specific change you want to accomplish now.?</i>	
- <i>How will you measure success?</i>	

Analysis	
<i>The root cause(s) of the problem.</i>	
- <i>Why are we experiencing the symptom?</i>	
- <i>What constraints prevent us from the goal?</i>	
<i>Choose the simplest problem-solving tool for this issue:</i>	
- <i>Five whys</i>	
- <i>Fishbone</i>	
- <i>QC Tools</i>	
- <i>SPC, Six Sigma, Shainin, Kepner Traego, others...</i>	

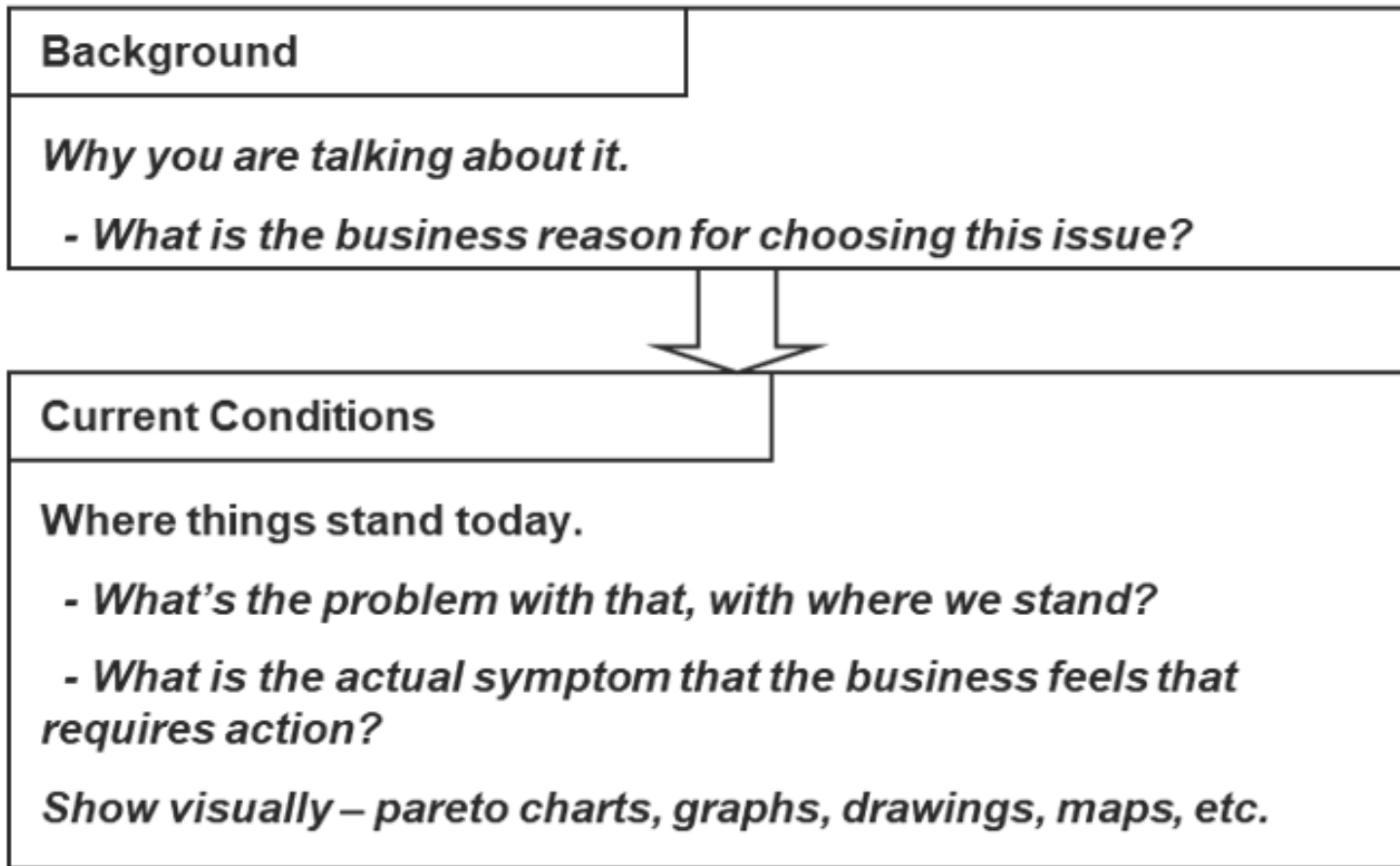
<i>initials</i>					<i>Owner</i>
Proposed Countermeasure(s)					
<i>Your proposal to reach the future state, the target condition.</i>					
- <i>What alternatives could be considered?</i>					
- <i>How will you choose among the options? What decision criteria?</i>					
<i>How your recommended countermeasures will impact the root cause to change the current situation and achieve the target.</i>					

Plan	
<i>A Gantt chart or facsimile that shows actions/outcomes, timeline and responsibilities. May include details on the specific means of implementation.</i>	
- <i>Who will do what, when and how?</i>	
<i>Indicators of performance, of progress.</i>	
- <i>How will we know if the actions have the impact needed?</i>	
- <i>What are the critical few, visual, most natural measures?</i>	

Followup	
<i>Remaining issues that can be anticipated.</i>	
- <i>Any failure modes to watch out for? Any unintended consequences?</i>	
<i>Ensure ongoing P-D-C-A. Yokoten as needed.</i>	

Source: Lean.org

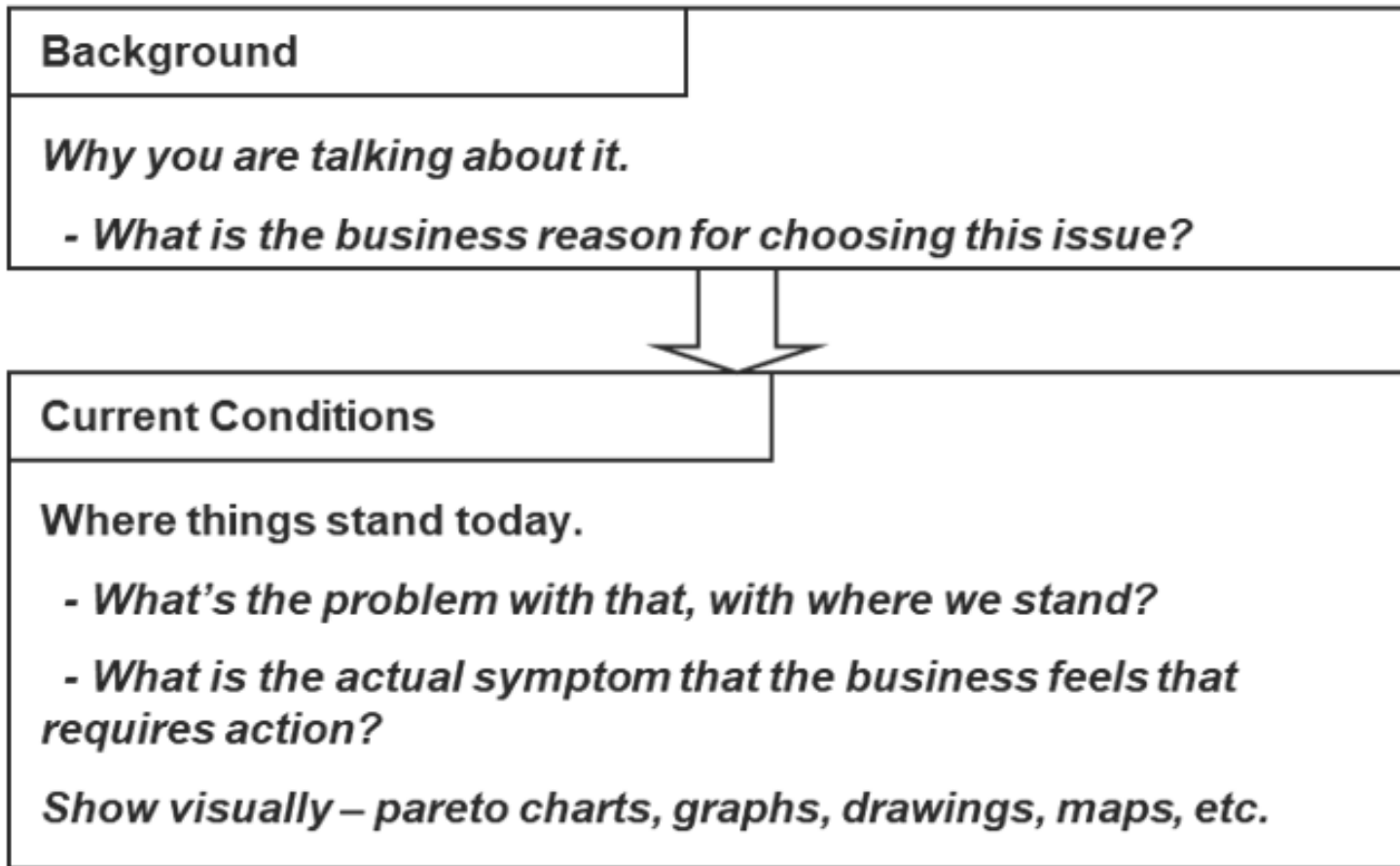
A3 – Background & Current Conditions



Example - Background

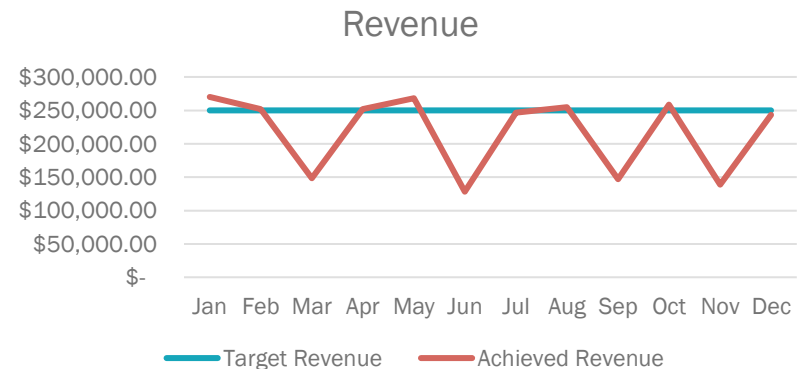
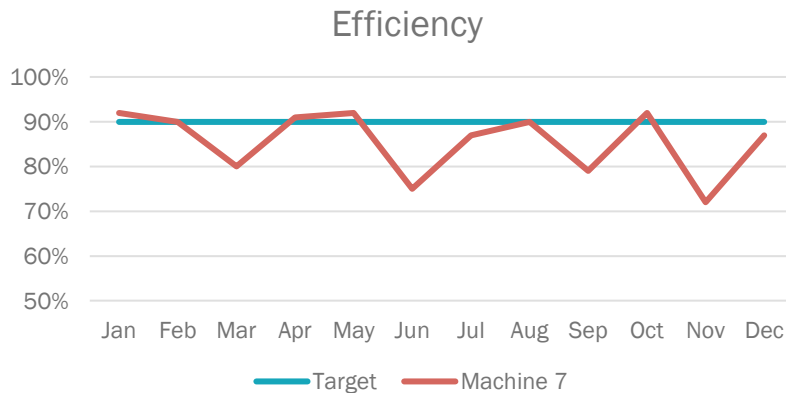
- ▶ Complaints from factory floor regarding machine 7 breaking down regularly

A3 – Background & Current Conditions



Example – Current Conditions

- ▶ Machine 7 breaks down on average 4 times a year, costing us around \$100k per breakdown (\$400k annual), and negatively impacting efficiency by >10% for one month per occurrence.



Annual Targets		
Efficiency Machine 7	90%	86%
Revenue	\$3M	\$2.6M

A3 – Target/Goal(s) & Analysis

Target/Goal(s)

The specific outcome required for the business.

- *What is the specific change you want to accomplish now.?*
- *How will you measure success?*



Analysis

The root cause(s) of the problem.

- *Why are we experiencing the symptom?*
- *What constraints prevent us from the goal?*

Choose the simplest problem-solving tool for this issue:

- *Five whys*
- *Fishbone*
- *QC Tools*
- *SPC, Six Sigma, Shainin, Kepner Traego, others...*

Source: Lean.org

Example – Target / Goal(s)

- ▶ By 2022:
 - Maintain target revenue of \$250k each month
 - Maintain target efficiency of 90% for machine 7 each month

- ▶ By 2022:
 - Achieve annual target of \$3M
 - Achieve annual target of 90% efficiency for Machine 7

A3 – Target/Goal(s) & Analysis

Target/Goal(s)

The specific outcome required for the business.

- *What is the specific change you want to accomplish now.?*
- *How will you measure success?*



Analysis

The root cause(s) of the problem.

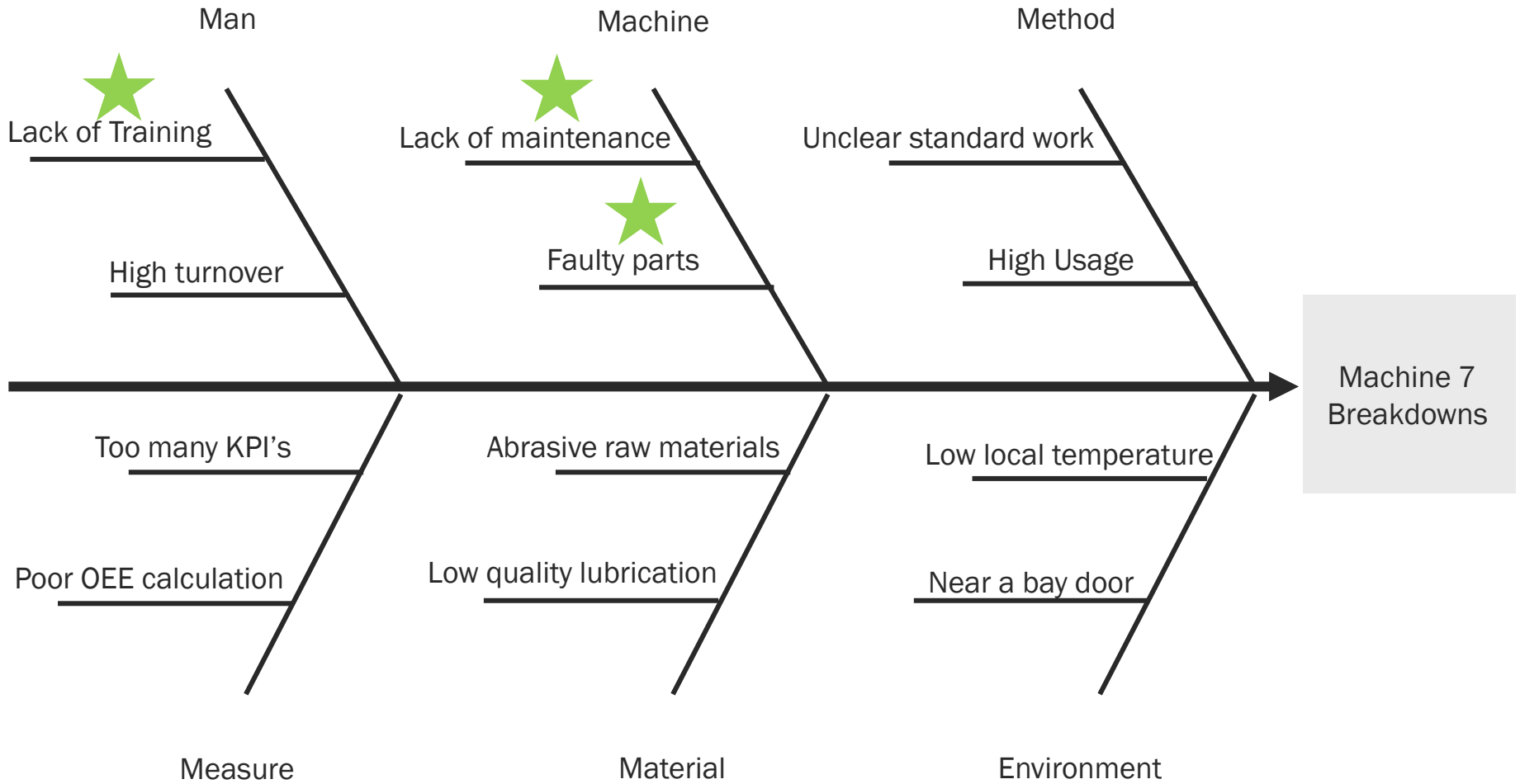
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- *Five whys*
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Source: Lean.org

Example – Analysis



A3 – Proposed Countermeasure(s)

<i>initials</i>				<i>owner</i>
Proposed Countermeasure(s)				
<p>Your proposal to reach the future state, the target condition.</p> <ul style="list-style-type: none"> - <i>What alternatives could be considered?</i> - <i>How will you choose among the options? What decision criteria?</i> <p>How your recommended countermeasures will impact the root cause to change the current situation and achieve the target.</p>				

Example – Proposed Countermeasures

- ▶ Ensure all operators receive training on how to correctly operate machine 7
 - Develop and implement training plan

- ▶ Replace all parts identified as faulty

- ▶ Replace all parts within 3 months prior to the end of their warranty period and all that have already exceeded it

Plan

A Gantt chart or facsimile that shows actions/outcomes, timeline and responsibilities. May include details on the specific means of implementation.

- Who will do what, when and how?***

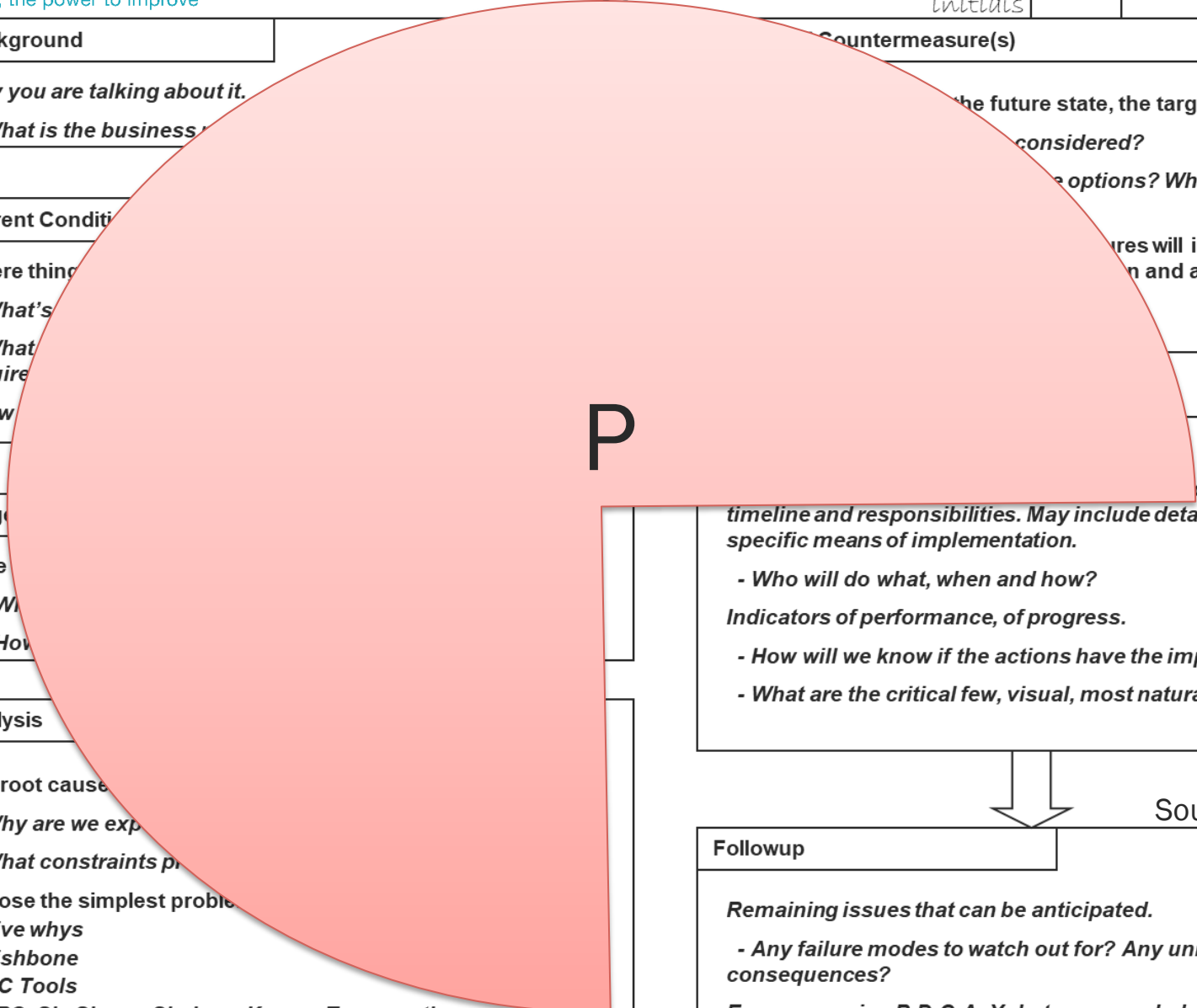
Indicators of performance, of progress.

- How will we know if the actions have the impact needed?***
- What are the critical few, visual, most natural measures?***

A3 Methodology

initials				Owner
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Background	Countermeasure(s)
<p><i>Why you are talking about it.</i></p> <ul style="list-style-type: none"> - What is the business... 	<p>the future state, the target condition.</p> <p>considered?</p> <p>options? What decision</p>
Current Condition	
<p>Where thing</p> <ul style="list-style-type: none"> - What's - What require <p>Show</p>	<p>ures will impact the</p> <p>n and achieve the</p>
Target	
<p>The</p> <ul style="list-style-type: none"> - W - How 	<p>outcomes,</p> <p>timeline and responsibilities. May include details on the specific means of implementation.</p> <ul style="list-style-type: none"> - Who will do what, when and how? <p>Indicators of performance, of progress.</p> <ul style="list-style-type: none"> - How will we know if the actions have the impact needed? - What are the critical few, visual, most natural measures?
Analysis	
<p>The root cause</p> <ul style="list-style-type: none"> - Why are we exp - What constraints p <p>Choose the simplest proble</p> <ul style="list-style-type: none"> - Five whys - Fishbone - QC Tools - SPC, Six Sigma, Shainen, Kepner Traego, others... 	<p>Source: Lean.org</p>
	Followup
	<p>Remaining issues that can be anticipated.</p> <ul style="list-style-type: none"> - Any failure modes to watch out for? Any unintended consequences? <p>Ensure ongoing P-D-C-A. Yokoten as needed.</p>



Plan

A Gantt chart or facsimile that shows actions/outcomes, timeline and responsibilities. May include details on the specific means of implementation.

- Who will do what, when and how?***

Indicators of performance, of progress.

- How will we know if the actions have the impact needed?***
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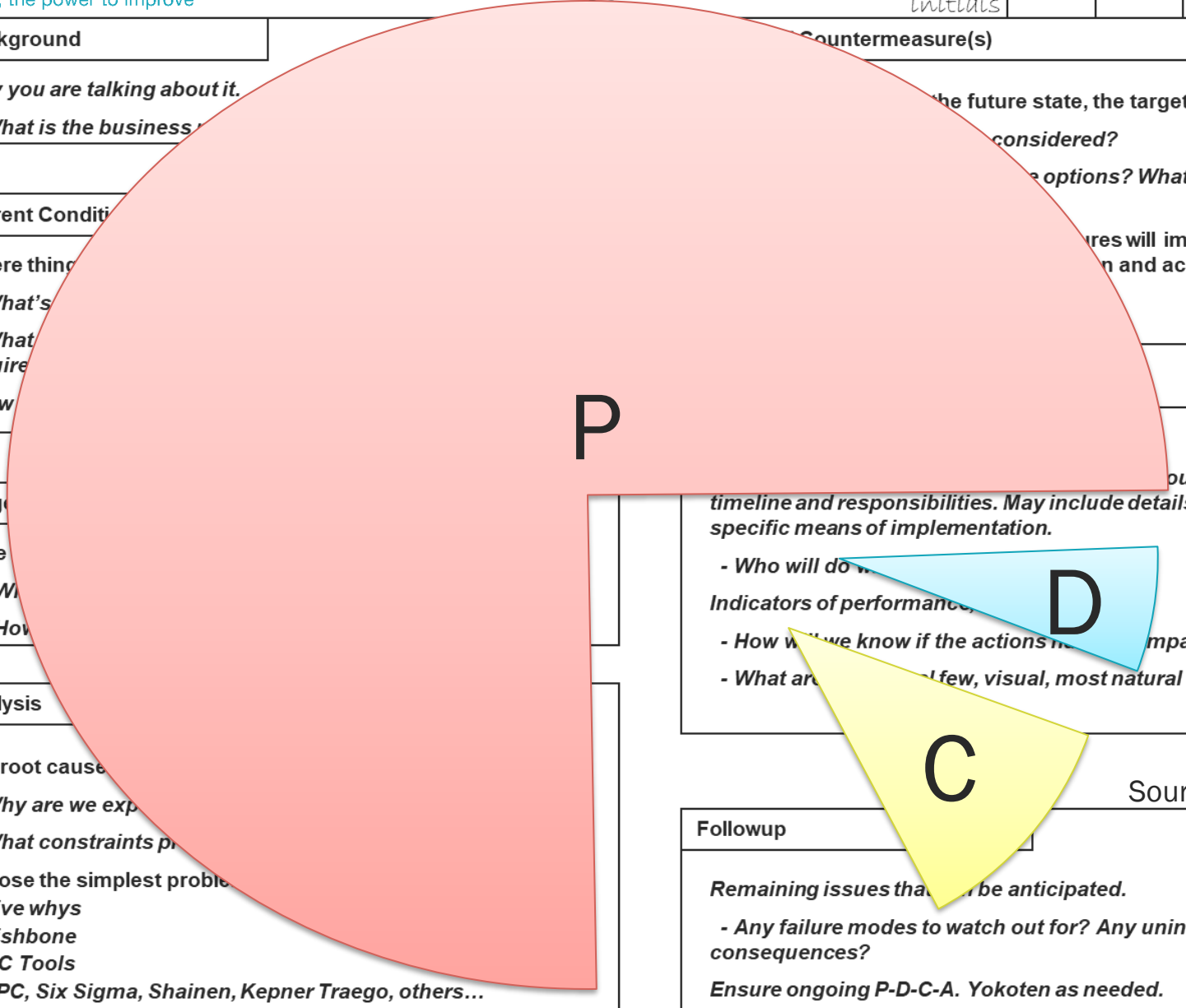
A3 Methodology

initials

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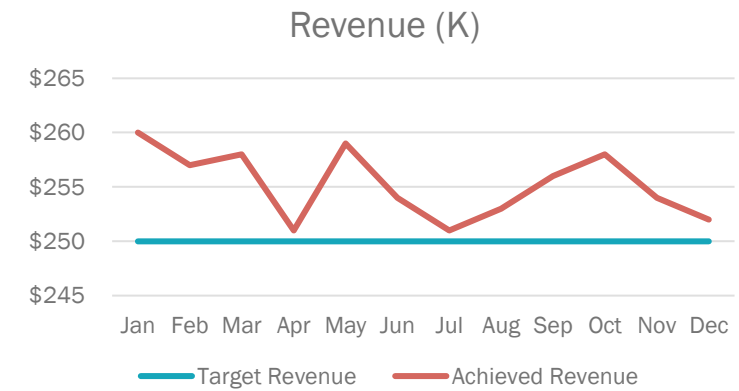
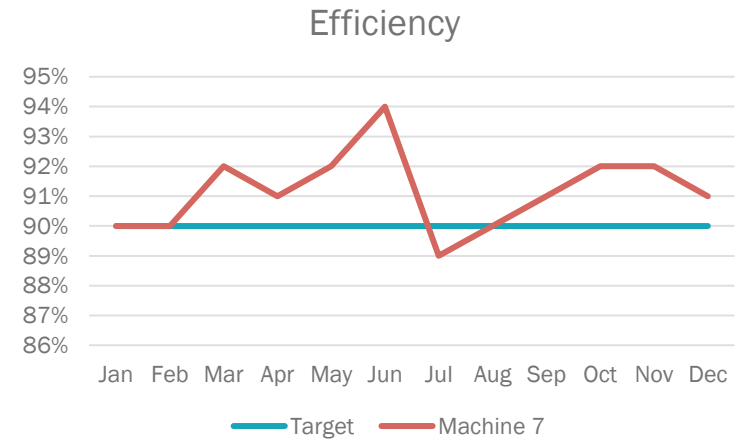
 Owner

Background	Countermeasure(s)
<i>Why you are talking about it.</i> - <i>What is the business...</i>	<i>the future state, the target condition.</i> <i>considered?</i> <i>options? What decision</i>
Current Condition	<i>ures will impact the</i> <i>n and achieve the</i>
Where things are going wrong - <i>What's...</i> - <i>What...</i> <i>require</i> Show	
Target	<i>outcomes,</i> <i>timeline and responsibilities. May include details on the</i> <i>specific means of implementation.</i>
The - <i>Who...</i> - <i>How...</i>	D <i>Indicators of performance,</i> - <i>How will we know if the actions... impact needed?</i> - <i>What are... few, visual, most natural measures?</i>
Analysis	C
The root cause - <i>Why are we exp...</i> - <i>What constraints p...</i> Choose the simplest problem to solve - <i>Five whys</i> - <i>Fishbone</i> - <i>QC Tools</i> - <i>SPC, Six Sigma, Shainin, Kepner Traego, others...</i>	Source: Lean.org
	Followup <i>Remaining issues that... be anticipated.</i> - <i>Any failure modes to watch out for? Any unintended consequences?</i> <i>Ensure ongoing P-D-C-A. Yokoten as needed.</i>



Example – Plan

Task Name	Duration	Start	Finish	Resource Names
Replace Faulty Parts	208 days	Sun 4/5/20	Wed 1/20/21	
Carry out testing	7 days	Sun 4/5/20	Mon 4/13/20	Simon
Identify faulty equipment	7 days	Tue 4/14/20	Wed 4/22/20	Simon
Assess replacement purchasing	90 days	Thu 4/23/20	Wed 8/26/20	Greg
Purchase new equipment	60 days	Thu 8/27/20	Wed 11/18/20	Greg
Carry out replacements	45 days	Thu 11/19/20	Wed 1/20/21	Simon
Replace Aged Parts	209 days	Tue 4/14/20	Fri 1/29/21	
Carry out testing	7 days	Tue 4/14/20	Wed 4/22/20	Jennifer
Identify aged equipment	7 days	Thu 4/23/20	Fri 5/1/20	Jennifer
Assess replacement purchasing	90 days	Mon 5/4/20	Fri 9/4/20	Greg
Purchase new equipment	60 days	Mon 9/7/20	Fri 11/27/20	Greg
Carry out replacements	45 days	Mon 11/30/20	Fri 1/29/21	Jennifer
Training Staff	214 days	Sun 4/5/20	Thu 1/28/21	
Identify necessary staff for training	5 days	Sun 4/5/20	Thu 4/9/20	Carlos
Develop training plan	30 days	Fri 4/10/20	Thu 5/21/20	Carlos
Implement Training Plan	180 days	Fri 5/22/20	Thu 1/28/21	Maria / Carlos



A3 - Followup

Followup

Remaining issues that can be anticipated.

- Any failure modes to watch out for? Any unintended consequences?

Ensure ongoing P-D-C-A. Yokoten as needed.

A3 Methodology

initials

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 Owner

Background	Countermeasure(s)
<i>Why you are talking about it.</i> - <i>What is the business context?</i>	<i>What is the future state, the target condition?</i> <i>What options have been considered?</i> <i>What are the options? What decision was made?</i>
Current Condition	<i>What resources will impact the plan and achieve the target?</i>
Where things are going wrong - <i>What's the problem?</i> - <i>What are the requirements?</i> Show pictures	
Target	<i>What are the expected outcomes, timeline and responsibilities. May include details on the specific means of implementation.</i> - <i>Who will do what?</i>
The plan - <i>What are the actions?</i> - <i>How will we know if the actions have the impact needed?</i>	D <i>Indicators of performance.</i> - <i>How will we know if the actions have the impact needed?</i> - <i>What are a few, visual, most natural measures?</i>
Analysis	
The root cause - <i>Why are we experiencing this?</i> - <i>What constraints prevent us from solving this?</i>	C
Choose the simplest problem to solve - <i>Five whys</i> - <i>Fishbone</i> - <i>QC Tools</i> - <i>SPC, Six Sigma, Shainin, Kepner Traego, others...</i>	A
	<i>What are the modes to watch out for? Any unintended consequences?</i> <i>Ensure ongoing P-D-C-A. Yokoten as needed.</i>

Source: Lean.org

Example – Followup

- ▶ Intermittent staff testing to ensure high level of capability
- ▶ Implement TPM plan to ensure maintenance is managed
- ▶ Unintended Consequence – Machine spare parts storage

A3 - Example

Background

Complaints from factory floor regarding machine 7 breaking down regularly

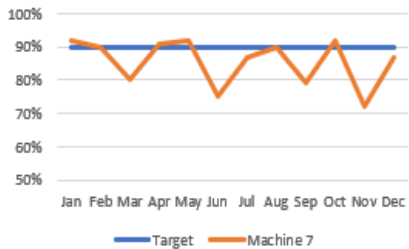
Proposed Countermeasure(s)

Ensure all operators receive training on how to correctly operate machine 7
Develop and implement training plan

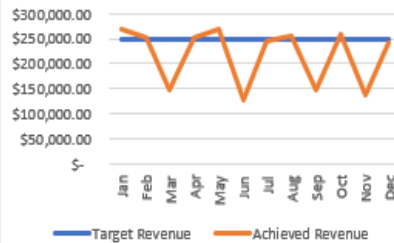
Current Conditions

Machine 7 breaks down on average 4 times a year, costing us \$100k per breakdown (\$400k annual), and negatively impacting efficiency by 10% for one week per occurrence.

Efficiency



Revenue



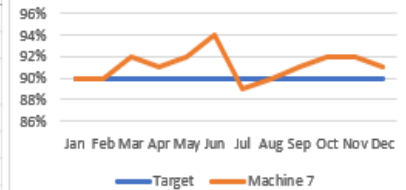
Replace all parts identified as faulty

Replace all parts within 6 months of lifespan warranty and all that have exceeded it

Plan

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Efficiency



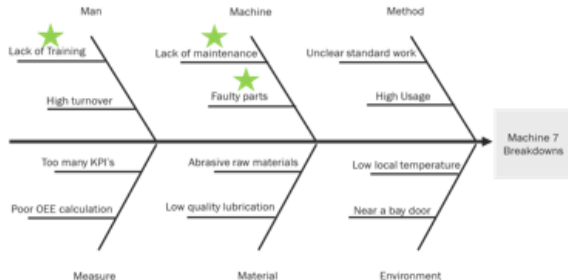
Revenue (K)



Goal / Target(s)

By 2022:
Maintain target revenue of \$250k each week
Maintain target efficiency of 90% for machine 7 each week

Analysis



Followup

Intermittent staff testing to ensure high level of capability

Preventative maintenance on machine 7

Unintended Consequence - Machine spare parts storage

► For more information

- Email us info@sapartners.com
- Visit our website www.sapartners.com