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Factsheet
Analysis Techniques

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The main difference between working with a to-do list and fundamentally improving with Cierpa Kaizen is, amongst others, the use of analysis techniques. The proper analysis of a problem allows you to find a better solution. Which analysis techniques are out there, and how do you use them?

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5W1H

Depending on the problem you want to solve, you start collecting data. It could be measurement data from Cierpa OEE, or audit data from the Cierpa Assessment 5S questionnaire. To find out what the problem is and which data you need to collect to solve it, you can use the 5W1H method.

5W1H	Question	Type of data
Who	Who is involved?	Look for differences in people/ departments, shifts/teams, employee working methods.
What	What exactly is the problem?	Look for differences in materials, amounts, interaction with the machine or the area.
Where	Where does the problem take place?	Look for differences in machines, specific locations at the plant, process, or machine.
When	When does the problem occur?	Look for differences in moments and duration of the specific problem. Also take into account changeover times, seasonal influences, start/during/after manufacturing process.
Which	Which part of the process or problem is linked to the problem?	Look for differences in time, per period. Is the problem persistent or does it occur occasionally?
How	How many products, defects are linked to the problem?	Look for differences in variation during other circumstances or events.

5xWhy

All problems have a cause, but that cause may not always be instantly visible. To fundamentally solve a problem the cause needs to be visible first. The 5xWhy method helps you get to the core of the problem. Here's an example:

5xWhy	Cause	Problem
Why (1)		A door doesn't close as well as it should.
Why (2)	Why doesn't the door close properly?	Because the hinges aren't placed in exactly the right place.
Why (3)	Why haven't the hinges been places at the exact right place?	Because the frame on which the hinges are attached isn't always in exactly the same place.
Why (4)	Why isn't the frame always in exactly the same place?	Because the entire frame isn't rigid enough.
Why (5)	Why isn't the frame rigid enough?	Because the rigidity of the frames isn't sufficiently guaranteed during manufacturing.
Solution	A possible redesign of the frame, making it more rigid.	

You can keep asking the why-question, until you are down to the real problem.

Fishbone diagram

A fishbone diagram, or Ishikawa diagram, charts the possible causes of problems, using a diagram in the shape of a fishbone.
The fishbone diagram essentially leans on four Ms: Man, Machine, Material, and Method. Every 'bone' has its part within the diagram:

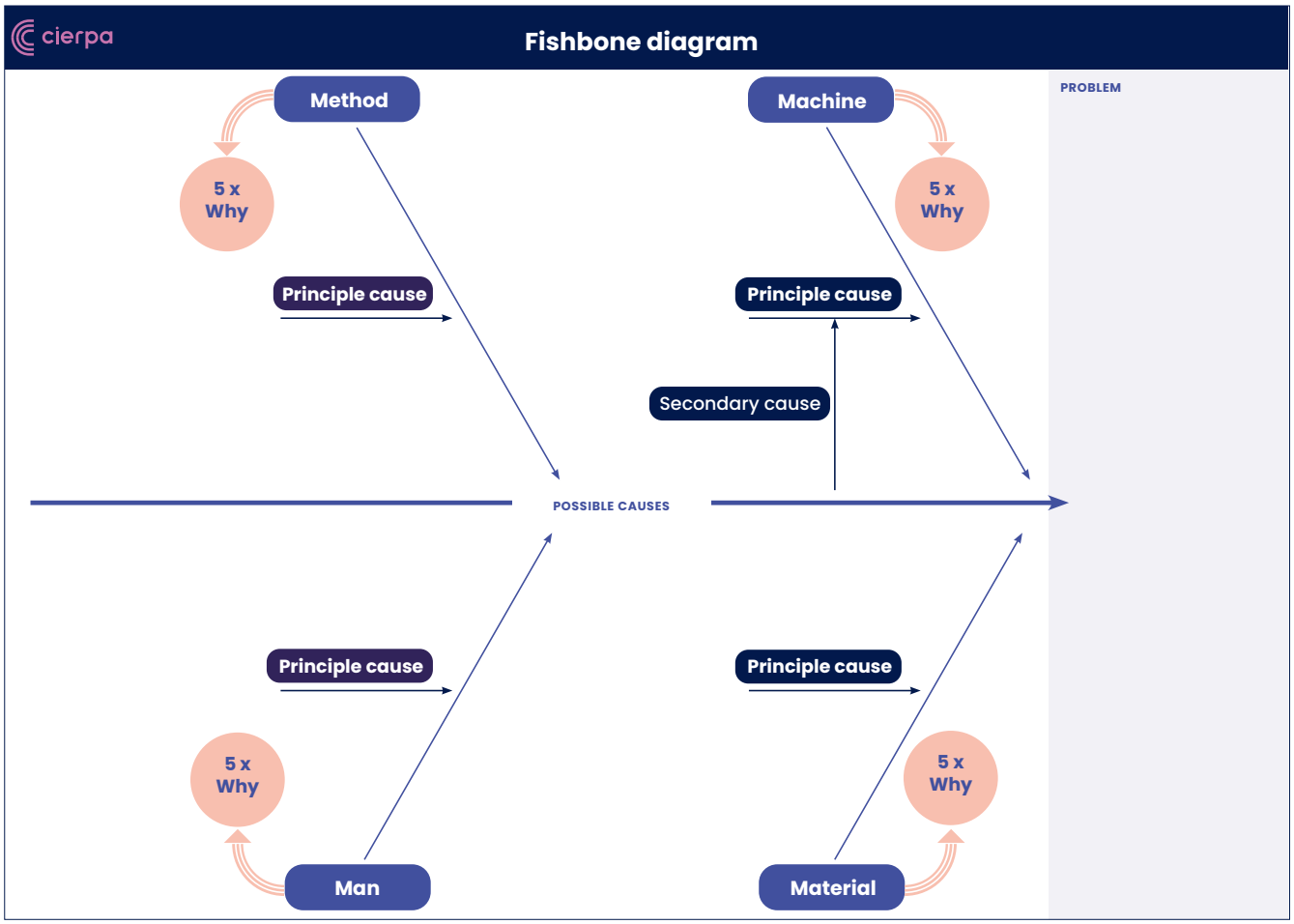
Man - All people involved with the problem.
Machine - All machines and tools used in the workspace.
Method - All prescribed and usual work instructions.
Material - All required raw and ancillary materials.

The Measurements and Milieu Ms can be added too:
Measurements - Process data used for quality control.
Milieu - Process conditions, like organizational culture, location, time, and temperature.

Creating a fishbone diagram is a group process. Enlarge the diagram and use a whiteboard. Then, write the problem on the right side of the template. Make sure you have an accurate description of the problem!

1. Brainstorm possible causes:
   a) Follow a 5xWhy using this question: why does this error occur?
   b) Rely on facts: don't think you know the cause.
   c) Interview people that know the process.
   d) Visualize the process with a flowchart.
   e) Develop the fishbone diagram.
   f) Go back to B.

2. Assess the causes together, so the most usable and realistic ideas remain.
3. Categorize the causes towards the Ms and fill in the fishbone diagram.



Download the fishbone diagram

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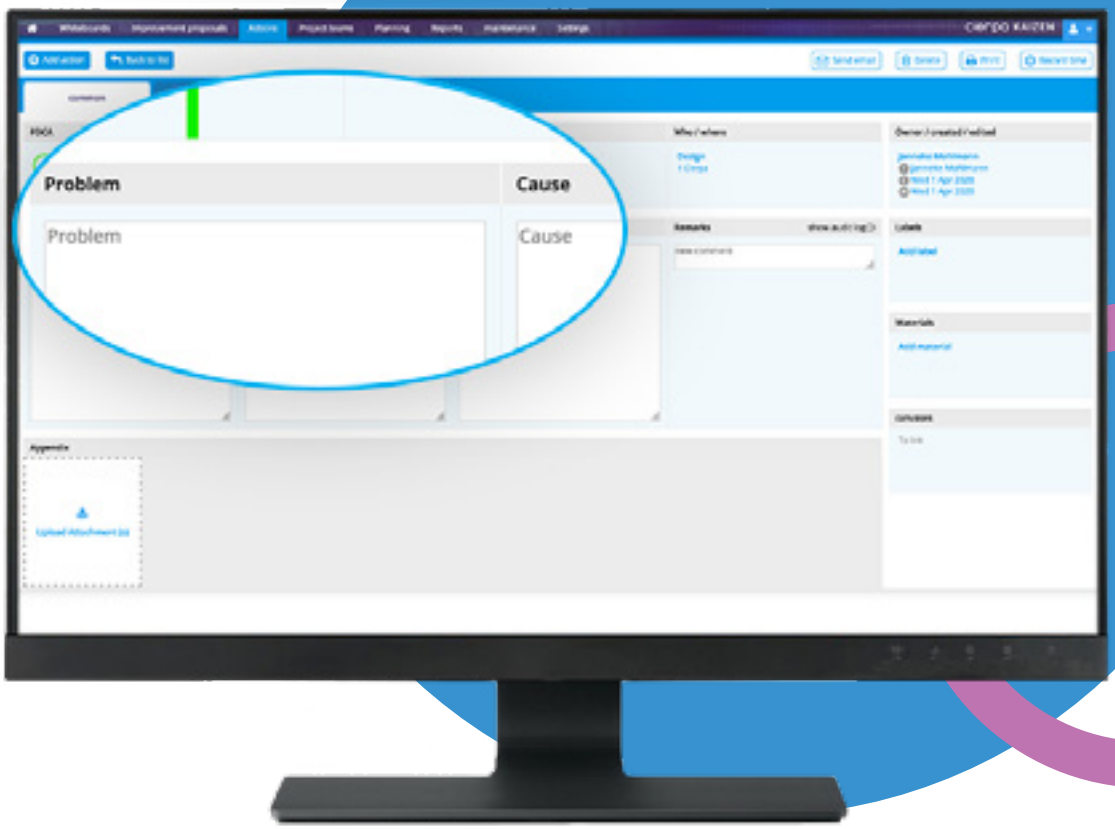
Cierpa Kaizen is more than a to-do list. With every improvement action and every improvement process you are challenged to think about the real problem and the true cause. When you use the Deming-circle (PDCA) the right way you also ensure the problem will not occur again. The analysis techniques and the Cierpa OEE and Cierpa Kaizen reports allow you to manage your improvement ideas perfectly within Cierpa Kaizen. So you can improve fundamentally and continuously.

More about Cierpa Kaizen



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