Game 3: A3 Problem Solving

Objective

In this game, the 8 steps of problem-solving will be experienced on hand of a simple card trick. By focusing on the detailed description of the circumstances, the participants will get closer to the solution which ultimately will lead them to uncover how the card trick is done.

Number of Participants

One Instructor

1 to 10 Participants.

Needed Material

- One deck of cards
- Flipchart or paper to record the A3 problem solving

Procedure

The instructor stands in front of the participants and states that he/she is able to memorize the whole deck of cards in 10 Seconds. The instructor hands over the playing cards to one of the participants in the audience and ask him to shuffle it. This is to make sure the cards have not been placed in any specific order.

After the participant has shuffled the deck, the instructor takes it back and goes through the whole deck, quickly looking at each card. This takes less than 10 seconds.

After this has been done, he takes the deck of cards, places it behind his back for a second and brings it to the front showing the cards to the audience in a way that he cannot see it.

He Instructor then names the card showed to the audience without seeing it.

The Instructor then takes the deck again behind his back and shows to the audience the next cards (again in a way that he cannot see it). He then names the card. The instructor repeats this procedure as many times as wished and, in every time, he can name the exact card without looking at it.

After this demonstration has been done, the instructor askes if anyone believes that he memorized the entire deck of cards? He then admits that he didn't needed to memorize the cards to perform the trick. But that now they all have a problem. They should find out how he did it by using the A3 problem solving tool.

The Explanation on how to perform the magic trick is given on great video tutorial from Sankey Magic. Use his explanations and hints to construct your own presentation of this trick.

https://youtu.be/EOR8EITmZ4g

After the trick has been performed, the next step is to go into the problem solving.

Step 1 – 3 Background, Problem Description, Target Condition.

Use the flipchart to write down the background of what just happened. Use questions and problem-solving tools to describe the problem in detail. Remember that 80% of the solution is obtained having a good problem description.

Let the participants struggle a little, let them try to write the problem description. Then ask if they got all the details of what has happened.

Does it make sense to create a flow-chart to visualize the sequence of events?

Can you use 5W2H to describe what has happened?

What was done with the cards? How was the position during the trick? Which Hand was used? What have you seen, what have you not seen? When was the card announced?

These are some questions which are crucial for finding the solution.

Define the target condition. In this case a suitable target condition is that the person in the audience should become able to perform the same trick in a convincing manner. Be specific and quantify as much as possible.

After describing and understanding exactly what has happened and a target condition is defined, it is time to look for the root cause.

Step 4 – Analysis

The Ishikawa diagram offers a good help in order to cluster possible reasons.

Write down the possibilities how this trick may be done. Is there something on the deck (Material)? Maybe a marked deck? Is there a mirror (Environment)? Could there be a secret helper in the audience (Man)? Could there be some secret move behind the back which the audience should not see (Method)? Can the instructor peek at the cards at some point? Is there some different texture in the cards?

It is time to try-out and investigate. Formulate hypothesis and test them. Let the participants use the cards and try to mimic exactly what the instructor has done. Follow the exact movements and point out difficulties or differences.

At this point, usually some of the participants become able to find out the trick and are able to reproduce it to their colleagues.

Let the participants play with it so avoid participants from other groups giving away the solutions.

Step 5, 6 – Define and implement countermeasures

In this step you can have a talk to define the needed actions in order for another person to become able to perform the trick. How, when should be practiced? Feedback? Performing?

Which other measures are needed?

Step 7 – Track the defined KPI.

How about the defined KPI's? Are they suitable? How successful where you?

Step8 – Lessons learned

What have you learned during this exercise? What can be transferred to other areas?

Closing notes:

This training is meant to be led by experienced A3 problem solver. The content of this training can be adjusted according to each individual training style. The details on how to fill out the A3, as well as the importance of coaching and mentoring during this problem solving can also be included into the training.

Important learnings are:

- A good problem description is fundamental for the finding of the root cause.

- It is not always easy to quantify the targets for a problem solving. However, a clear criterion for considering the problem solved need to be established.

- The Ishikawa diagram should be filled with possible causes. Afterwards an investigation or simulations can be performed to validate each of these possible causes.

- The definition and implementation of countermeasures, KPI Tracking and Lessons learned often get to less attention. It is part of good management to keep focusing on these steps to ensure the sustainable solution to the problem.

THE MANUFACTURING DECK
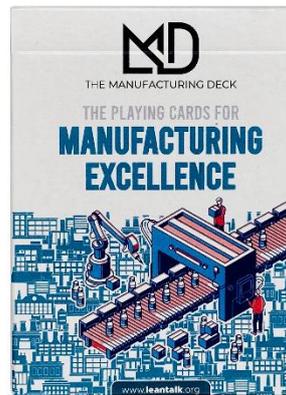
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