

1.3: Activity- Apply the Practical Problem-Solving Approach to the Case

Activity: Application of Structured Problem Solving

Watch the following videos of Caleb Connor (ABM Lead) from ATS Automation introducing the concept of structured problem-solving.

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Step 1: Define the Team!

Who would be best involved in this Problem-Solving Team? List the roles you would want to involve.

1. Use the organizational chart to choose who should be involved in the project and explain their role and why they should be on the team. (see [Appendix A – Organizational Chart](#))

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Step 2: Identify the Problem

1. What are the targets of on-time supplier delivery? Given the table below, graph the data and determine the performance over the past 12 months, **by month and in total**. Is there a trend or pattern (# of PO On-time / # of PO)? What is the identified gap?

Month	# of PO Receipts	# of Late PO Receipts	# of Supplier Scorecards Issued
January	1256	378	0
February	1344	399	0
March	1452	433	0
April	1678	433	2
May	1198	278	3
June	1098	245	4
July	987	203	6
August	970	199	8
September	1409	245	11
October	1987	280	13
November	2240	300	15

Month	# of PO Receipts	# of Late PO Receipts	# of Supplier Scorecards Issued
December	2334	298	16

2. From this analysis, construct a single-sentence problem statement.

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Step 3: Investigate the Root Cause.

- Review and analyze the data collected on late purchase orders. (see [Appendix B for Late PO data](#)) – The team also conducted a follow-up study of a selection of problem purchase orders over the past two months to help identify the root cause, or causes, of these missing and late purchase orders.
 - How does this data start to inform your understanding of the issue?
- Review the Ishikawa / Fishbone Diagram – The team did this as pre-work to inform this analysis. (see [Appendix F – Ishikawa Diagram – Top Three Analysis](#)) Multiple possible problem areas were identified under six broad categories, and following a team vote, the most popular were identified and highlighted in blue together with the number of votes each received. The three that received the highest votes are shown in Appendix F – Top Three Analysis together with an assortment of possible root causes for each. Review the 14 possible root causes shown in the Top Three Analysis against the information provided in the case study.
 - Which three possible root causes would you choose to investigate further?
- What data provided in the case study have you used to support your selections for further investigation? Complete the supplier performance table shown in Appendix D (see [Appendix D – Key Supplier Performance Report](#)) to complete the report you must utilize the data from the provided workbook. ([Download the Excel File with Crawford Case Data](#))
 - What observations can you make from the completed supplier performance report data?
 - Are there any relationships or connections between the supplier performance data that support or contradict the possible root causes listed in:
 - Appendix F – Ishikawa Diagram,
 - Appendix B – Late PO data?
 - Reconsider the question asked above — “Which three possible root causes would you choose to investigate further?” — and based on the additional supplier performance data, identify if your selections have changed from those you identified earlier? If so, why?
- Go to the Gemba. Kaur has decided that your team needs to look for the missing part 998223356, which the vendor said was shipped to Crawford Automation. You will need to review the PO and the Packing Slip for this part, which can be found in Appendix C (see [Appendix C – Purchase Order](#)), and Appendix E (see [Appendix E – Packing Slip](#)).
 - Did you find the box?
 - Why do you think the box had not been received?

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Step 3: Investigate the Root Cause Continued

- Conduct a Five Whys analysis and complete the table in Appendix G (see [Appendix G – The Five Whys Template](#)).

There are four main steps to using the Five Whys template:

- The observed problem is documented to initiate the process.
- Use the template to document the answers to the following questions.

- a. Why (#1) is the observed problem happening?
- b. What Gemba evidence supports the answers generated?
3. Continue the process for Why (#2) through to Why (#5) as required.
 - a. Why (#2) are the answers/findings in the previous step happening?
 - b. What Gemba evidence supports the answers generated?
4. Repeat the process by asking up to five Why questions until the root cause(s) are identified.

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Step 4: Identify and Implement Countermeasures

Using the Five Whys analysis, identify for each root cause a short-term countermeasure to ensure the issue does not get worse and a long-term countermeasure to fix forever (process improvement).

1. Does every action have a clear action, owner, and due date?

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Step 5: Verify the Impact of Countermeasures and Start Again

It is important in this step that your next review meeting is scheduled and that the team begins to collect the data to measure the impact of countermeasures.

1. Choose one of the recommended corrective actions and identify which of Crawford's performance measures (as discussed in the case) should be impacted.
2. For the chosen action, identify a performance measure that could be negatively impacted by the corrective action. For example, quality may suffer when operators are asked to increase speed.

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