ORACLE

8-D Problem Solving Worksheet

Document Number and Revision: 7331768 Rev 05

Overview

8-D is a quality management tool; is a vehicle for a cross-functional team to articulate thoughts; provides scientific determination to details of problems; and provides solutions. Organizations can benefit from the 8-D approach by applying it to all areas in the company.

Audience

Oracle employees and suppliers

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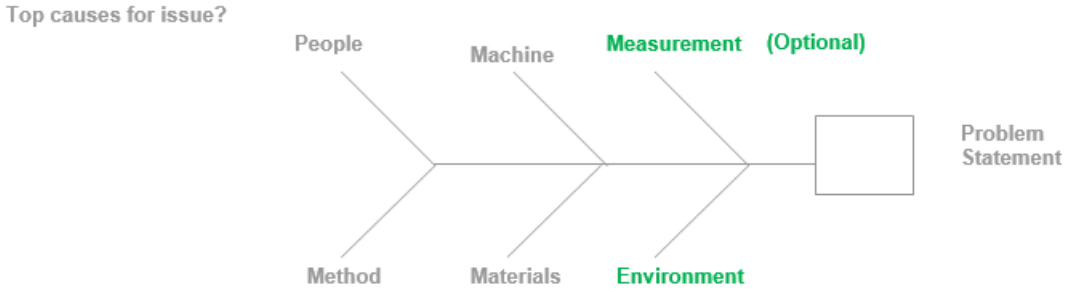
Tracking Number:	Customer Number: NCAT#	Response Due Date:

8-D is a quality management tool; is a vehicle for a cross-functional team to articulate thoughts; provides scientific determination to details of problems; and provides solutions. Organizations can benefit from the 8-D approach by applying it to all areas in the company. The 8-D provides excellent guidelines allowing us to get to the root of a problem and ways to check that the solution actually works (reference 923-3148).

Step	1	2	3	4	5	6	7	8
Action	Establishing the Team	Problem Definition/Statement & Description	Developing Interim Containment Action	Identifying & Verifying Root Cause	Identifying Permanent Corrective Actions (PCA)	Implementing and Validating PCA	Preventing Recurrence	Recognizing Team Efforts

1	**Establishing the Team** Establish a small group of people with the process/product knowledge, allocated time, authority, and skill in the required technical disciplines to solve the problem and implement corrective actions.		Team Goals: Team Objectives:	
	Department	Name	Skills	Responsibility
2	**Problem Definition/Statement & Description**		**Sketch/Photo of Problem**	
	Provide a concise description of the problem. Quantify it with actual performance values and lastly provide a priority rating using FMEA score methods			
	Part Number(s):			
	Customers(s):			

	Problem Description: (low possible level)	
	Prepare Process Flow Diagram for problem Use a separate sheet if needed	
	Provide an estimated FMEA score: **Occurrence Score =** **Severity Score =** **Detection Score =** **Total Score - _____ This defines the priority.**	**Go to FMEA Appendix "A", page 6**
3	**Developing Interim Containment Actions – Create SSP if required.** Temporary actions to contain the problem and "fix" until permanent correction is in place – document actions in Action Item table	
4A	**Identifying & Verifying Root Cause** Analyze for "Root Cause" of the problem. Identify and verify the Escape Point	
	Brainstorm the top possible causes of the problem. Use separate attachment for more space; ppt or visio works great). After completion of fishbone, take a silent vote with each Team member getting three votes. All votes can be applied to one cause or divided up between two or three top possible causes. Now you have two top causes, one for cause one for why not detached.	
4A	**Cause and Effect Diagram**	



4B	2x5 Why Analysis – For 'Cause' and for 'Why not detected' (Ea. Q&A, 10 – 15 words or less; Q&A should follow the process element path.

To Cause? _____ (from fishbone)_____

Why Question: _____

Answer: _____

Why Question: _____

Answer: _____

Why Question: _____

Answer: _____

Why Question: _____

Answer: _____

Why Question: _____

Answer: _____

To Why Not Detected Cause? _____(from fishbone)_____

Why Question:

_____

Answer: _____

Why Question: _____

Answer: _____

Why Question: _____

Answer: _____

Why Question: _____

Answer: _____

Why Question: _____

Answer: _____

4C	**Action Plan** Based on the team's determined root causes, begin to complete the Root Cause Action Plan. Plans need to correct the cause(s) and the detectability.

5	**Identifying Permanent Corrective Actions (PCA)** Solutions that address and correct the root cause and detection. Solutions determined to be the best of all the alternatives. Document and verify the Permanent Corrective Action (PCA) in the Action Item Table.

6	**Implementing & Validating PCA** Implement and validate to ensure that corrective action does "what it is supposed to do." Detect any undesirable side effects. At this point, recalculate the FMEA score taking the PCAs into effect. If the score is > than (7) points, then additional actions need to be considered because there is still too much risk. Use Appendix "A" for scoring.	
	Original Priority FMEA Score: **Occurrence Score =**	**Provide a final Risk FMEA score:** **Occurrence Score =**

	Severity Score = **Detection Score =** **Original Priority Score = _____**	**Severity Score =** **Detection Score =** **Remaining Risk Score = _____** (Must be <8pts. or additional c/a's are needed)
7	**Preventing Recurrence** Typically true root causes point to system deficiencies. Determine what improvements in systems and processes would prevent problem from recurring. Determine what business process documentation/procedure needs to be revised. Ensure that corrective action remains in place and successful.	
7A	**Address Similar Systems**	

	Process/Item	**Who Responsible**	**When**

7B	**Review the following documents/systems**

Document	Who Responsible	Completion Date	
		Planned	Actual
Management System Manual			
Manufacturing Work Instructions			
Inspection Work Instructions			
Process Flow Charts			
Process Control Plans			
Design FMEA			
Process FMEA			
Test Procedure			
PPAP			
Engineering Change Approval			
Equipment Programs			
Training Procedure/Methods			

8	**Recognizing Team Efforts**

	Use all forms of employee recognition and document as necessary	
Was this problem solving exercise effective? Has it been verified with a follow-up?		
Yes No	Signature/Title/Date	Findings

2B Optional Step

2B – One **optional** step to help better define the problem "IS and IS NOT"

2B	IS	IS NOT
Who	Who is affected by the problem? Who first observed the problem? To whom was the problem reported?	Who is not affected by the problem? Who did not find the problem?
What	What type of problem is it? What has the problem (part id, lot #s, etc)? What is happening with the process & with containment? Do we have physical evidence of the problem?	What does not have the problem? What could be happening but is not? What could be the problem but is not?
Why	Why is this a problem (degraded performance)? Is the process stable?	Why is it not a problem?
Where	Where was the problem observed? Where does the problem occur?	Where could the problem be located but is not? Where else could the problem be located but is not?
When	When was the problem first noticed? When has it been noticed since?	When could the problem have been noticed but was not?
How Much/Many	Quantity of problem (ppm)? How much is the problem costing in dollars, people, & time?	How many could have the problem but don't? How big could the problem be but is not?
How Often	What is the trend (continuous, random, cyclical)? Has the problem occurred previously?	What could the trend be but is not?

Appendix A – FMEA Scoring

FMEA Scoring for initial problem priority and final risk assessment

Score Definition

Probability of occurrence:

1 – Remote possibility – similar parts have been used for similar functions in previous designs or processes, and there have been no failures. (Cpk > 2.0)

2 – Low failure rate with similar parts having similar functions in previous designs or processes. (Cpk – 1.67)

3 – Moderate failure rate with similar parts having similar functions in previous designs or processes. (Cpk – 1.0)

4 – Frequent failure rate with similar parts having similar functions in previous designs or processes. (Cpk – 0.67)

5 – High probability of failure – it is almost certain to occur in a significant proportion of cases. (Cpk < 0.33)

Severity:

1 – Failure of a minor nature which may or may not be detectable by the customer; causes only slight annoyance without any noticeable degradation in system or subsystem performance.

2 - Failure **with** prior warning which causes customer dissatisfaction and customer is made uncomfortable or is annoyed by the failure; some system or subsystem degradation noted.

3 – Failure **without** prior warning which causes customer dissatisfaction and customer is made uncomfortable or is annoyed by the failure; some system or subsystem degradation noted.

4 -Failure **with** prior warning which causes major customer dissatisfaction, because of an inoperable system, or an inoperable convenience subsystem.

5 -Failure **without** prior warning which causes major customer dissatisfaction, because of an inoperable system, or an inoperable convenience subsystem.

Probability of detection:

1 – Very high probability that the defect will be detected before reaching the customer. The defect will most probably be detected during manufacturing and assembly, as a result of inspections and tests. (1/10,000)

2 – High probability that the defect will be detected before reaching the customer. Test and inspections during manufacturing will catch most defects. This defect will rarely reach a customer or supplier. (1/2000)

3 – Moderate probability of detection before reaching the customer. The defect will not often be detected during manufacture. Final inspections, out-of-box audits, and customer installations will detect most of the remaining defective units. (1/500)

4 – Low probability of detection before reaching the customer. The customer will accept the unit with an indication of minor defects. There will be latent failures. (1/50)

5 – Very low probability of detection before reaching the customer. The customer will probably accept installation of the system, and the defect will be detected sometime after this. (1/10+)

Related Information

Document History

Rev	Date	Description of Change	Originator
01	02 May 2016	Initial release.	N/A
02	16 June 2016	In section 4B added the corresponding "Answer" piece after the 5th "Why" question.	N/A
03	24 Feb 2017	Update to reflect organization changes and converted to Word file format. Added Document History section	N/A
04	15 Mar 2024	Converted to Redwood format. Modified 8D step headings.	N/A
05	19 Sept 2024	No Content Changes. Change attachment category to Misc on attachment, so supplier can access form.	N/A

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