

ASQ 0708 Affinity Diagramming Session



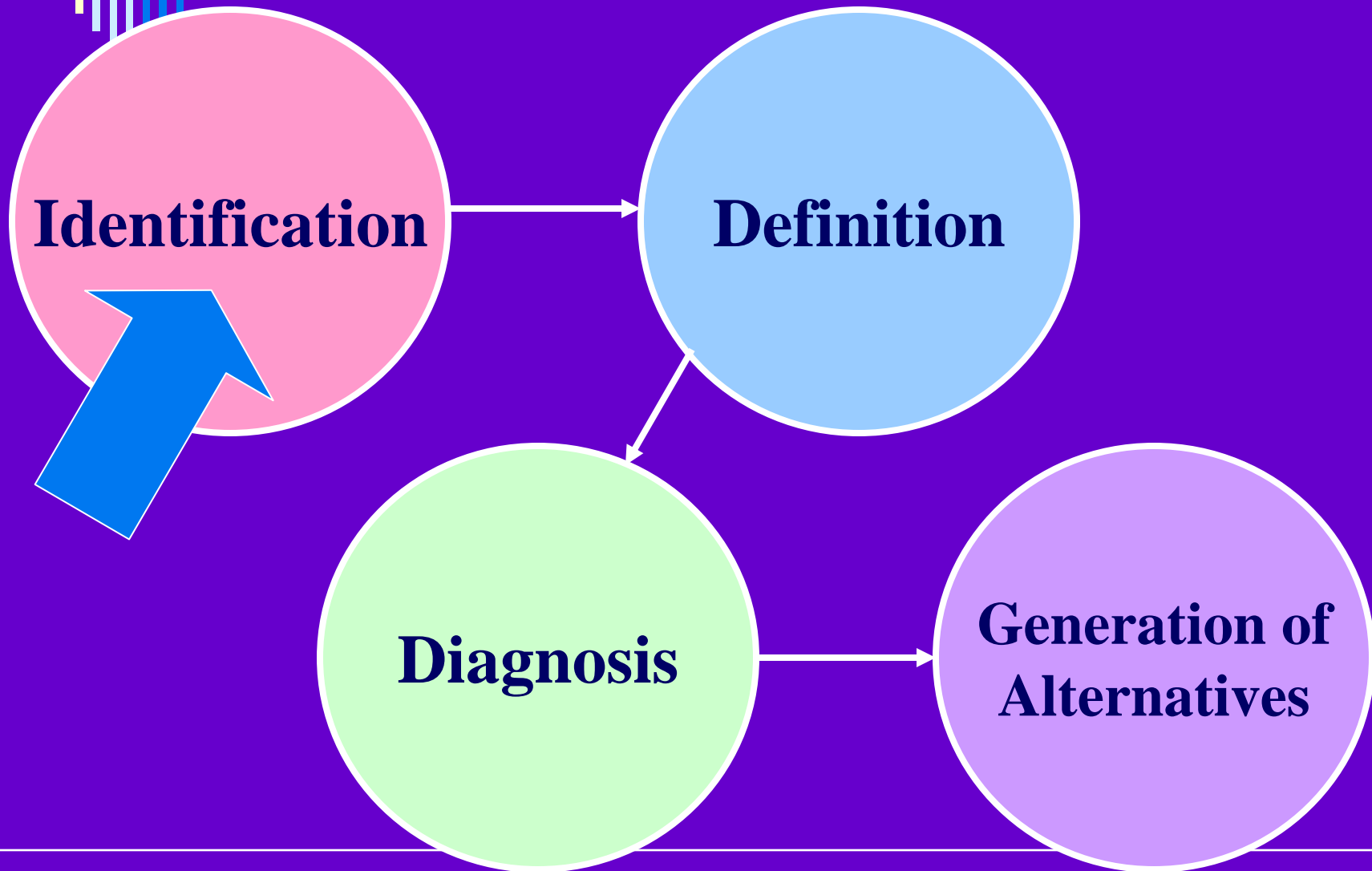
Lori Benson, CQA
Senior Quality Systems Audit Specialist
OneLegacy
213-229-5688
e-mail: lbenson@onelegacy.org

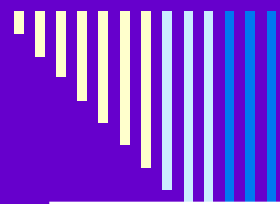


Ways to Improve a Process

- Process is in control
 - Change/improve the process itself
 - Narrow the variation
 - Move the average up or down closer to the optimum level
 - Do both
 - Process is out of control
 - Identify and remove the causes
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Critical Problem Solving





Tools and Techniques

Obtaining Information / Collecting Data

Brainstorming

Check Sheet

Defect Distribution Diagram

Interviews

Surveys

Organizing Information / Data

Affinity Diagram

Activity Network Diagram

Gantt Chart

Flow Chart

Force Field Analysis

Radar Chart

SWOT Analysis

Relating Information / Data

Cause & Effect (Fishbone) Diagram

Interrelationship Digraph

Matrix Diagram

Scatter Diagram

Tree Diagram

5 Whys Tree

Process Decision Program Chart

Prioritizing Information / Data

Failure Mode & Effect Analysis (FMEA)

Nominal Group Technique

Prioritization Matrices

Pareto Chart

Quality Function Deployment (QFD)



Tools and Techniques

Analyzing Information / Data

Control Charts

Run Chart

Gage R & R

Histogram

Loss Function

Process Capability Studies

Working in Teams

Conducting an Effective Meeting

Team Techniques

Improving Processes

Plan-Do-Study-Act
PDSA Cycle

Design of Experiments



In order to improve ANY process
you must FIRST understand it

- What are the critical points?
 - HACCP* was implemented in the food industry because they failed to understand and control the critical operations in food safety

*HACCP Stands for Hazard And Critical Control
Points

Today we will perform a brainstorming
and Affinity Diagram exercise in
order to identify critical control points.



Day to Day Identification Tips:

- Be on active look-out
 - Go and observe
 - Take note of surprising occurrences, signs, and natural symptoms
 - Anticipate and prevent
 - Pay attention to likely trouble spots
 - Develop and keep open lines of communication
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Pitfalls in Identification

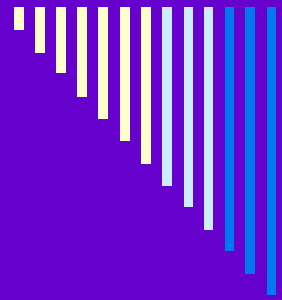
- ❑ Biased thinking and perception
- ❑ Lowering goal levels to make current performance more acceptable
- ❑ Scapegoating
- ❑ Not managing problem identification as an organization





Affinity Diagram

- ❑ One of the 7 Management and Planning tools
 - ❑ Gathers large amounts data
 - ❑ Organizes data into natural groupings
 - ❑ Summarizes groupings under headers
 - ❑ Creative process - “right brain thinking”
 - ❑ Participative, team tool
 - ❑ Visual document
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Affinity Diagram

When to Use

- ❑ When you are confronted with many facts or ideas in apparent chaos
- ❑ When issues seem too large and complex to grasp
- ❑ When group consensus is necessary

Brainstorming / Affinity



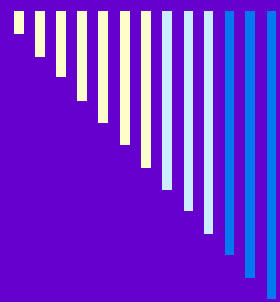
□ We want to improve, but don't know whether to "fish or cut bait".

□ Where do we start?



□ What are the most Important steps to control?





Step 1 Brainstorming

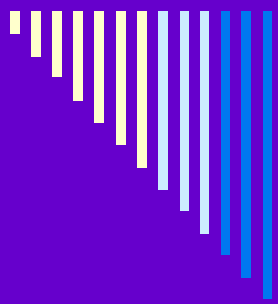
USE FOR ANY PROCESS / PROBLEM

- What are the Critical Points in the ASQ meeting process?
- Record each idea with a marking pen on a separate sticky note or card.
- No Judging! No idea is wrong just keep writing
- Silence is essential



Comments...

- What did you think of this process?
 - Would you like to see it done elsewhere?
 - Are you ready for the NEXT step?
-



It is one of the most effective and easiest ways to determine improvement projects

- Added value – Almost complete buy in from the participants. No one else foisted this plan upon them it is theirs. They own it!

Easy AND Effective!

Degree of complexity	New tool	Useful area
Low: 1	Affinity diagram	Brainstorming, consensus
2	Relations diagram	Cause and effect
3	Tree diagram	Logic based problem solving
4	Process decision program chart	Identifying best solution
5	Arrow diagram	Resource planning
6	Matrix diagram	Determining interrelated factors
High: 7	Matrix data analysis	Quantitative analysis



Step 2 Affinity Diagram

- Randomly spread notes on a large work surface so all notes are visible to everyone. The entire team gathers around the notes and participates in the next steps.
 - It is very important that no one talk during this step.
 - Look for ideas that seem to be related in some way. Place them side by side.
 - Repeat until all notes are grouped. It's okay to have "loners" that don't seem to fit a group. Others can add additional cards or notes to a group as it forms or reform existing groups. Set aside any cards or notes that become contentious
 - It's all right to move a note someone else has already moved.
 - **If a note seems to belong in two groups, make a second note.**
 - There should be fewer than 10 groups.
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Affinity Diagram Completion

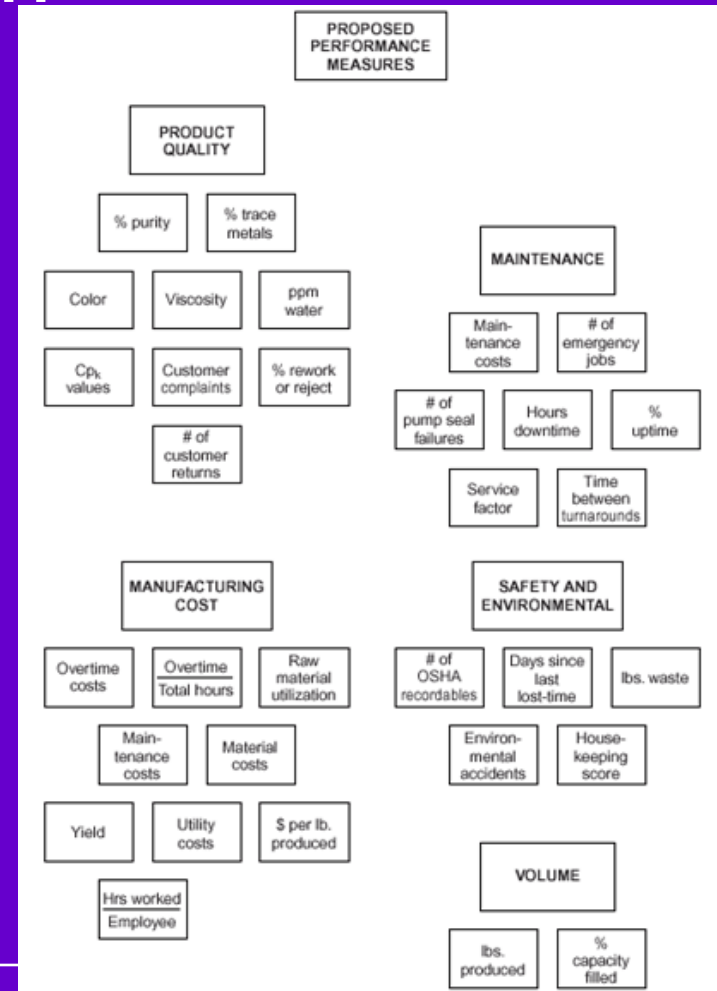
- You can talk now. Participants can discuss the shape of the chart, any surprising patterns, and especially reasons for moving controversial notes
 - A few more changes may be made. When ideas are grouped, select a heading for each group. Look for a note in each grouping that captures the meaning of the group. Place it at the top of the group. If there is no such note, write one.
 - Often it is useful to write or highlight this note in a different color.
 - Combine groups into “super groups” if appropriate.
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Step 3 Multivoting

- Now discuss the groupings as a team.
 - Generate short, descriptive sentences that describe each group and use these as title cards or notes.
 - Avoid one- or two-word titles. 6. Items can be moved from one group to another if a consensus emerges during the discussion
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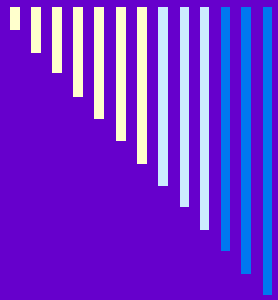
Example of a completed Affinity Diagram





Now we have defined our Critical Points

- Do we have a CLEARLY defined process for each point?
 - Decide which points are to be worked on and in what order.
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Thank you!

- Are you prepared for the NEXT step?
- For more information on quality Tools:
 - www.asq.org

*Learning is not compulsory ... neither is survival.
W. Edwards Deming*
