Affinity Diagrams – January 2014

Affinity diagrams – I never believed that I would find them fun to make. After all, I think statistical process control (SPC) is great – looking at data, finding the information contained in that data about my processes – very little better than that! Yet, there comes a time when we have to face the facts – creative tools are a necessary part of problem solving and improvement. We can't always do it with data alone. This month's publication takes a look at one of those creative tools – the Affinity Diagram.

An Affinity Diagram provides a great way of generating a large number of ideas or opinions about an issue that is very large or complex. For example, deciding how to implement Six Sigma in an organization is not a simple task. The Affinity Diagram offers a way to quickly shift through the myriad of ideas and opinions in a very efficient way.   In this issue, we will address the following questions:

- What is an Affinity Diagram?
- When should I use an Affinity Diagram?
- How do I develop an Affinity Diagram?
- How do I use an Affinity Diagram?

Plus, we still have our summary and quick links! The summary contains a link to download an Affinity Diagram template in Excel.

- Summary
- Quick Links
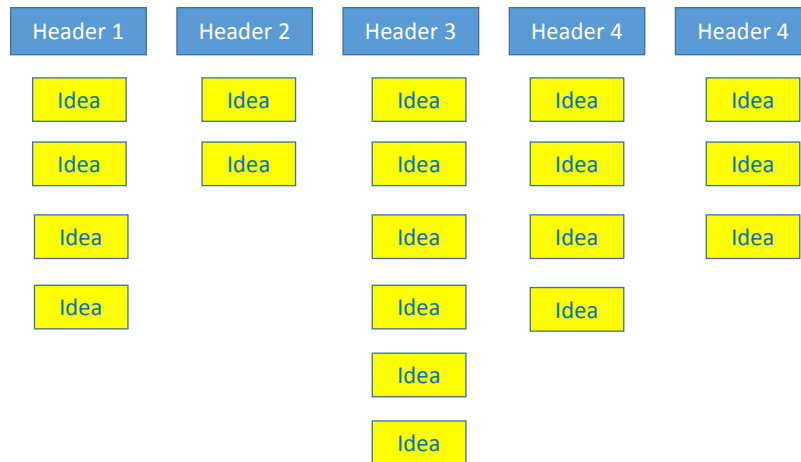
What is an Affinity Diagram?

An Affinity Diagram is a tool that helps you organize lots of ideas in a very efficient manner – and in a short timeframe. Think about how many ideas you can generate about a complex subject. Maybe 50 – maybe more.   You may have the ideas listed on several pieces of flip chart paper. Now what do you do with all these ideas? Some ideas are similar while others stand alone. What a mess!

Figure 1: Brainstormed List of Ideas
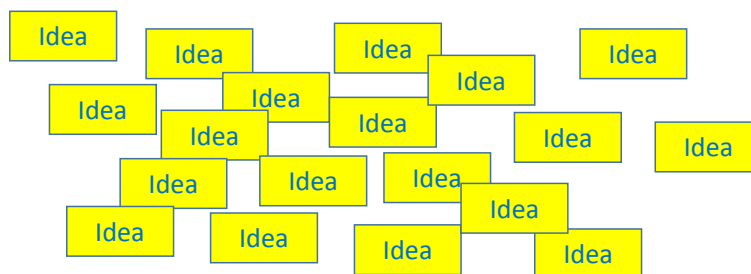
What the Affinity Diagram does is to help you organize all these ideas into natural groups as shown below. The Affinity Diagram is developed in a team setting. The process used helps ensure that all team members' skills are utilized. The end result is a logical layout of the ideas – however, the process used is really a creative one – one that can involve "silent brainstorming" and "no talking."

Figure 2: Affinity Diagram Places Ideas into Natural Groups

Header 1	Header 2	Header 3	Header 4	Header 4
Idea	Idea	Idea	Idea	Idea
Idea	Idea	Idea	Idea	Idea
Idea		Idea	Idea	Idea
Idea		Idea	Idea	
		Idea		
		Idea		

The Affinity Diagram is one of the so-called Seven Management and Planning Tools. The seven techniques are:

- Affinity Diagram
- Interrelationship Digraph
- Tree Diagram
- Prioritization Matrices
- Matrix Diagram
- Process Decision Program Chart
- Activity Network Diagram

We will take a look at the other six tools in future publications. A great resource for all these tools is the Memory Jogger Plus by Michael Brassard.   According to this reference, the Affinity Diagram was developed by a Japanese anthropologist, Jiro Kawakita.   He found that this approach helped him keep from falling back into his own paradigms and theories about the way societies and social institutions were supposed to be. Using the affinity diagram allowed him to find new patterns in the data.

An example of an affinity diagram is shown in Figure 3. This affinity diagram addresses what a quality leadership steering committee in a manufacturing plant wants to accomplish in the coming year.   Figure 4 shows a partial Affinity Diagram on goals for a coordinator group assisting in implementing process improvement.

When Should I Use an Affinity Diagram?

The examples Figure 3 and Figure 4 show how the Affinity Diagram can be used to find out what needs to happen to accomplish goals. Affinity Diagrams allow you to "get your arms around" complex issues. Affinity Diagrams also help you look at things in a new way. For example, you might want to tackle barriers to getting products to the customer on-time. Anytime you plan on implementing something new, e.g., introducing a new product line, the Affinity Diagram offers you a way to ensure that you have considered everything.   The more complex the issue, the more applicable the Affinity Diagram is.

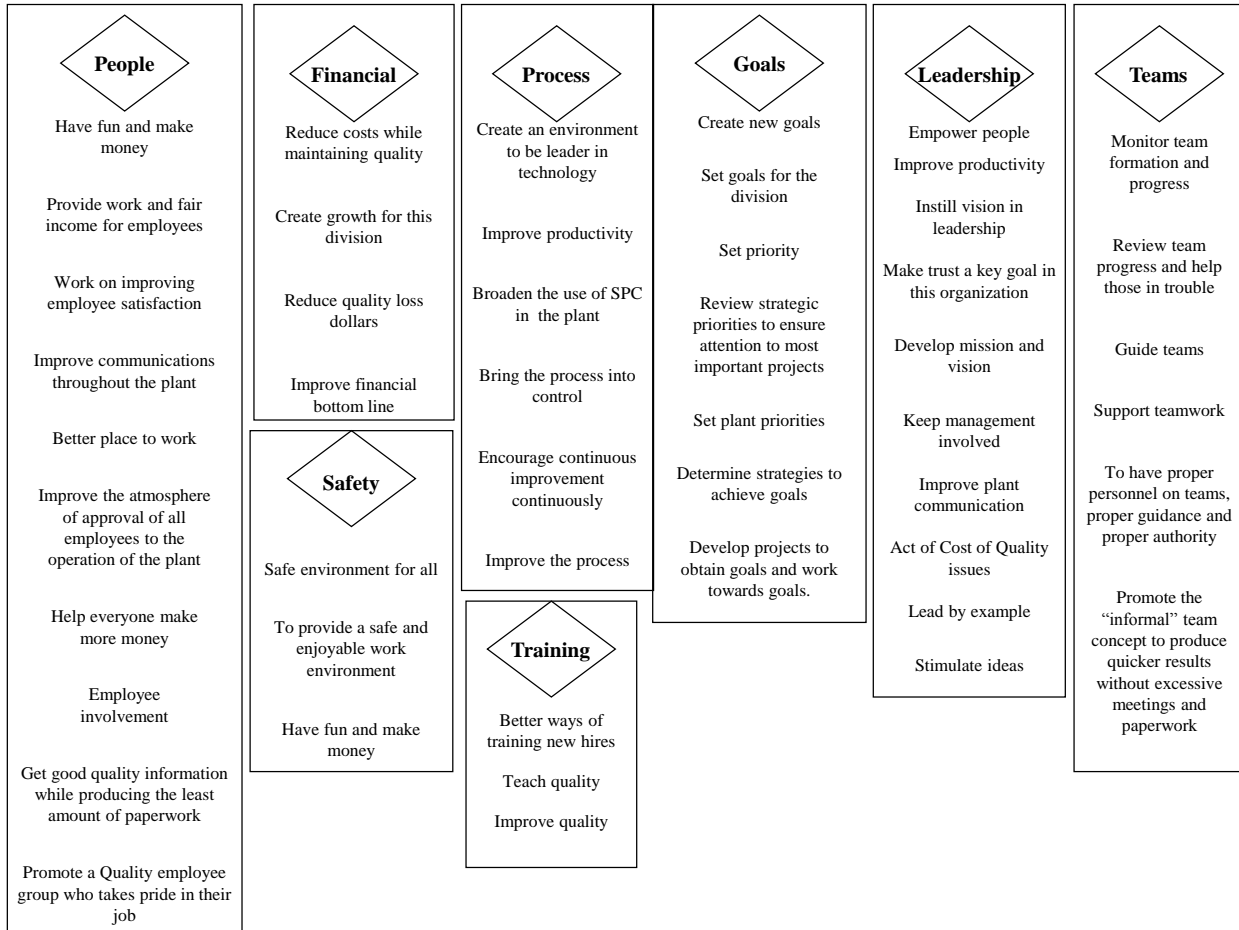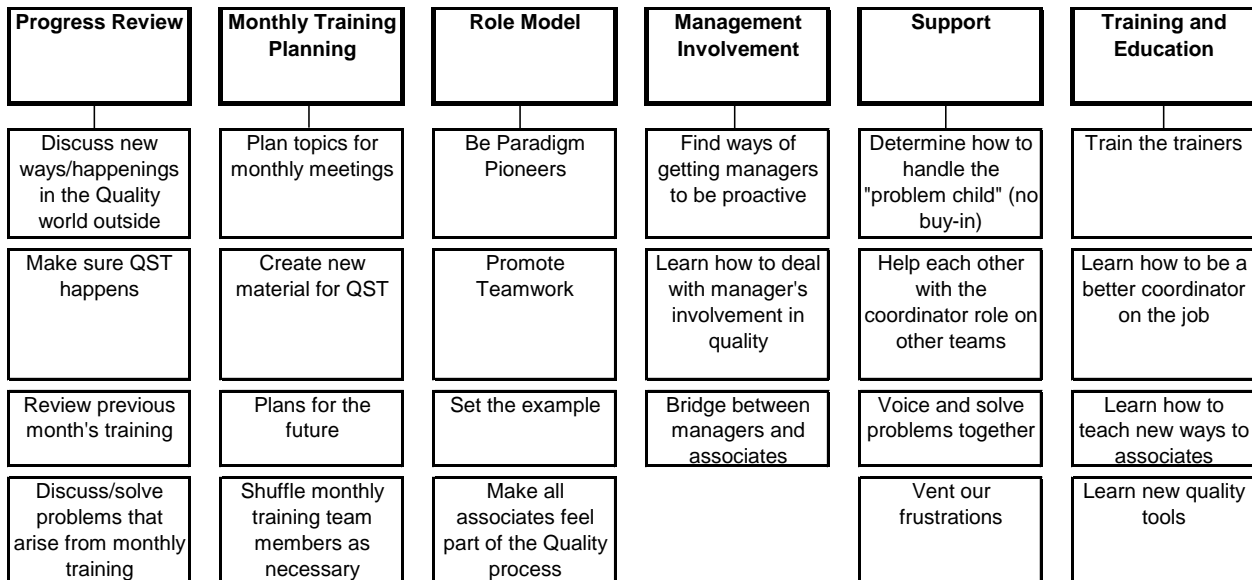**Figure 3: Affinity Diagram for Quality Leadership Steering Committee Goals**

People	Financial	Process	Goals	Leadership	Teams
Have fun and make money	Reduce costs while maintaining quality	Create an environment to be leader in technology	Create new goals	Empower people	Monitor team formation and progress
Provide work and fair income for employees	Create growth for this division	Improve productivity	Set goals for the division	Improve productivity	Review team progress and help those in trouble
Work on improving employee satisfaction	Reduce quality loss dollars	Broaden the use of SPC in the plant	Set priority	Instill vision in leadership	Guide teams
Improve communications throughout the plant	Improve financial bottom line	Bring the process into control	Review strategic priorities to ensure attention to most important projects	Make trust a key goal in this organization	Support teamwork
Better place to work		Encourage continuous improvement continuously	Set plant priorities	Develop mission and vision	To have proper personnel on teams, proper guidance and proper authority
Improve the atmosphere of approval of all employees to the operation of the plant	**Safety**	Improve the process	Determine strategies to achieve goals	Keep management involved	Promote the "informal" team concept to produce quicker results without excessive meetings and paperwork
Help everyone make more money	Safe environment for all		Develop projects to obtain goals and work towards goals.	Improve plant communication	
Employee involvement	To provide a safe and enjoyable work environment	**Training**		Act of Cost of Quality issues	
Get good quality information while producing the least amount of paperwork	Have fun and make money	Better ways of training new hires		Lead by example	
Promote a Quality employee group who takes pride in their job		Teach quality		Stimulate ideas	
		Improve quality			

Figure 4: Process Improvement Coordinator Goals

Progress Review	Monthly Training Planning	Role Model	Management Involvement	Support	Training and Education
Discuss new ways/happenings in the Quality world outside	Plan topics for monthly meetings	Be Paradigm Pioneers	Find ways of getting managers to be proactive	Determine how to handle the "problem child" (no buy-in)	Train the trainers
Make sure QST happens	Create new material for QST	Promote Teamwork	Learn how to deal with manager's involvement in quality	Help each other with the coordinator role on other teams	Learn how to be a better coordinator on the job
Review previous month's training	Plans for the future	Set the example	Bridge between managers and associates	Voice and solve problems together	Learn how to teach new ways to associates
Discuss/solve problems that arise from monthly training	Shuffle monthly training team members as necessary	Make all associates feel part of the Quality process		Vent our frustrations	Learn new quality tools

How Do I Develop an Affinity Diagram?

The steps in developing an Affinity Diagram are given below. You will need Post-it Notes, flip chart paper and markers.

1. *Put together a team to develop the affinity diagram.*

   The team should have at least 5 to 6 people. And the people need to have knowledge about the issue. If not, there is no way to dig deep into the issue.

2. *Define the issue for the Affinity Diagram.*

   Tape two pieces of flip chart paper together and to the wall. This gives you more space to work. Write the issue at the top of the flip chart paper. Do not be detailed in writing down the issue. The shorter and more vague the issue, the better. For example, the issue could be Six Sigma Implementation, Plant Safety, or 2014 Human Resources Goals. Do not spend time talking about what the issue means. This tends to add judgment into the mix.

3. *Brainstorm Ideas.*

   The objective here is generate as many ideas as possible and record them. You can do this in a more traditional brainstorming session (verbally) or you can do "silent brainstorming."

   In silent brainstorming, each person writes down his/her idea on a Post-it note. There should be one idea per Post-it note. Once everyone has completed their brainstorming onto the Post-it notes, ask everyone to take their notes and place them in random order on the flip charts. This means that a person should not leave his/her ideas on one part of the flip chart – instead, spread them around on the flip chart.

   For the verbal brainstorming, each person says his/her idea and writes it down on a Post-it note. Be sure to follow the rules of brainstorming – in particular, no discussion or judging ideas during the brainstorming session. After writing his/her idea down, the person places it randomly on the flip chart paper.

   The challenge for team members, regardless of the brainstorming approach, is to try to be as concise as possible with each idea. This usually means that the idea needs 5 to 7 words. Try to avoid ideas like "be safer." A better idea would be "paint pedestrian walkways in production area."

   At the end of this step, the Post-it notes should be on the flip chart in random order. At this point, you can always mix them up more if needed.

4. *Place the Cards into Groups.*

Gather the team around the flip chart paper containing the Post-it notes. During this step, the team members will group similar Post-it notes into columns. This is done silently – no talking during this step. **This silence is very important**.

Ask team members to find Post-it notes that are similar and move them into the same column. If someone disagrees with what another person does, he/she can move the Post-it notes again. Don't worry. This will not go on forever. Continue to put the Post-it notes into similar columns until everyone agrees with the grouping of the Post-it notes.

There will typically be 6 to 10 groupings. It is fine to have a grouping with a single Post-it note under it. The tendency is to try to force fit it into one of the other groupings, but if it is really unique, then leave it by itself.

Be sure that everyone participates in this grouping. Sometimes one or two people tend to dominate this step. It is important that everyone provide their perspective on the grouping of the Post-it notes.

This whole process does not take very long once it starts.   In fact, it is better not to over-analyze the groupings.

5. *Develop the Headings.*

Now you can talk. In this step, a heading is added to each column. This heading reflects the major idea of the Post-it notes in the column. For example, if one column contains safety ideas, a natural heading would be "Plant Safety." As you go through this step, it is possible that a new column may be created or a couple of Post-it notes move from one column to another as people discuss what they meant by their ideas.

6. *Tidy Up the Affinity Diagram*.

You finish up the Affinity Diagram by drawing lines around each column and connecting the column with its heading with a line. Tape the Post-it notes to the paper to ensure the Post-it notes do not fall off.

How Do I Use an Affinity Diagram?

You have finished the Affinity Diagram.   Now what? That depends on why you started the Affinity Diagram. And you will need to do something. In most cases, it will involve more work and analysis.

For example, if you were using an Affinity Diagram to develop goals, you will need to develop well-written goals for each key heading. The team can help you do this. If you were using the Affinity Diagram to develop ideas to solve problems (like barriers to on-time delivery), then you will need to reach agreement on the major barriers on the diagram and put together a team to work on those major barriers. So, how you use a completed Affinity Diagram depends on why you started it.

Summary

An Affinity Diagram is a method of quickly organizing many ideas in a complex issue. The process involves a team where members individually brainstorm ideas about the issue. The ideas are then randomly place on flip chart paper. The members silently group similar items into columns. Once complete, the headings for each column are added. This process allows you to find new ways of looking at information in a short-time frame.

You may download a simple Affinity Diagram Excel template here.

Quick Links

Visit our home page

SPC for Excel Software

SPC Training

SPC Consulting

SPC Knowledge Base

Ordering Information

Thanks so much for reading our newsletter. We hope you find it informative and useful. Happy charting and may the data always support your position.

Sincerely,

Dr. Bill McNeese
BPI Consulting, LLC