

Critical Thinking and Problem Solving

Leadership Revisited

- CAUSE > EFFECT
- Real-time Choice in Behavior
- What Kind of Leader Do You Want To Be?

The BLUE Hat



The Blue Hat usually gets things rolling.

- The process we will use
- The Goals and Objectives
- How the meeting will run – the “Ground Rules” so to speak

The WHITE Hat



- The White Hat is about Information.
 - Considering purely what information is available - what are the facts?
 - What facts do we need to research?
 - Are there more questions we need to ask?
 - Can we “prove it?”

The RED Hat



- Emotions are discussed with the Red Hat.
 - Intuitive or instinctive gut reactions or statements of emotional feeling (but not any justification)
 - Share feelings, opinions, emotions openly
 - Change might bring fear...or anger...or...

The BLACK Hat



- The Black Hat is the area of concern.
 - Logic applied to identifying reasons to be cautious and conservative.
 - This is the “What If” proposition.
 - Are you a “devil’s advocate?” You might find this hat to fit quite nicely!

The YELLOW Hat



- Turn off the Black and wear the Yellow Hat!
- Optimistic response – “We CAN DO this!”
- Logic applied to identifying benefits, seeking harmony
- Selling points

The GREEN Hat



- Lastly, we can put on the Green Hat...
- Creativity
- Statements of provocation and investigation, seeing where a thought goes
- Turning thoughts into action...eventually!

Problem Solving!!!

- There are a TON of tools available in your “toolbox” for solving problems...the question is, “Which one of the tools should I use for this particular situation?”
- “You wouldn’t use a hammer to screw in a screw...but a hammer is really useful!”

Some Tools...

- 5 Why Analysis
- Fishbone Diagram
- Pareto Analysis
- Process Mapping
- Brainstorming
 - Structured and Unstructured
- Action Item List
- PDCA Cycle

REMEMBER!!

- When you are solving problems, **MAKE SURE** you are solving the problem and **NOT** the symptoms!!
- Dig Deeper...for the real problems, not just what is on the surface.
- Use...
 - 5 Whys
 - Fishbone Diagrams

5 Whys

- When faced with a problem..."Mislabeled Product"...ask Why? And then ask Why? And then ask Why? ...get the picture?
- Let's see an example.



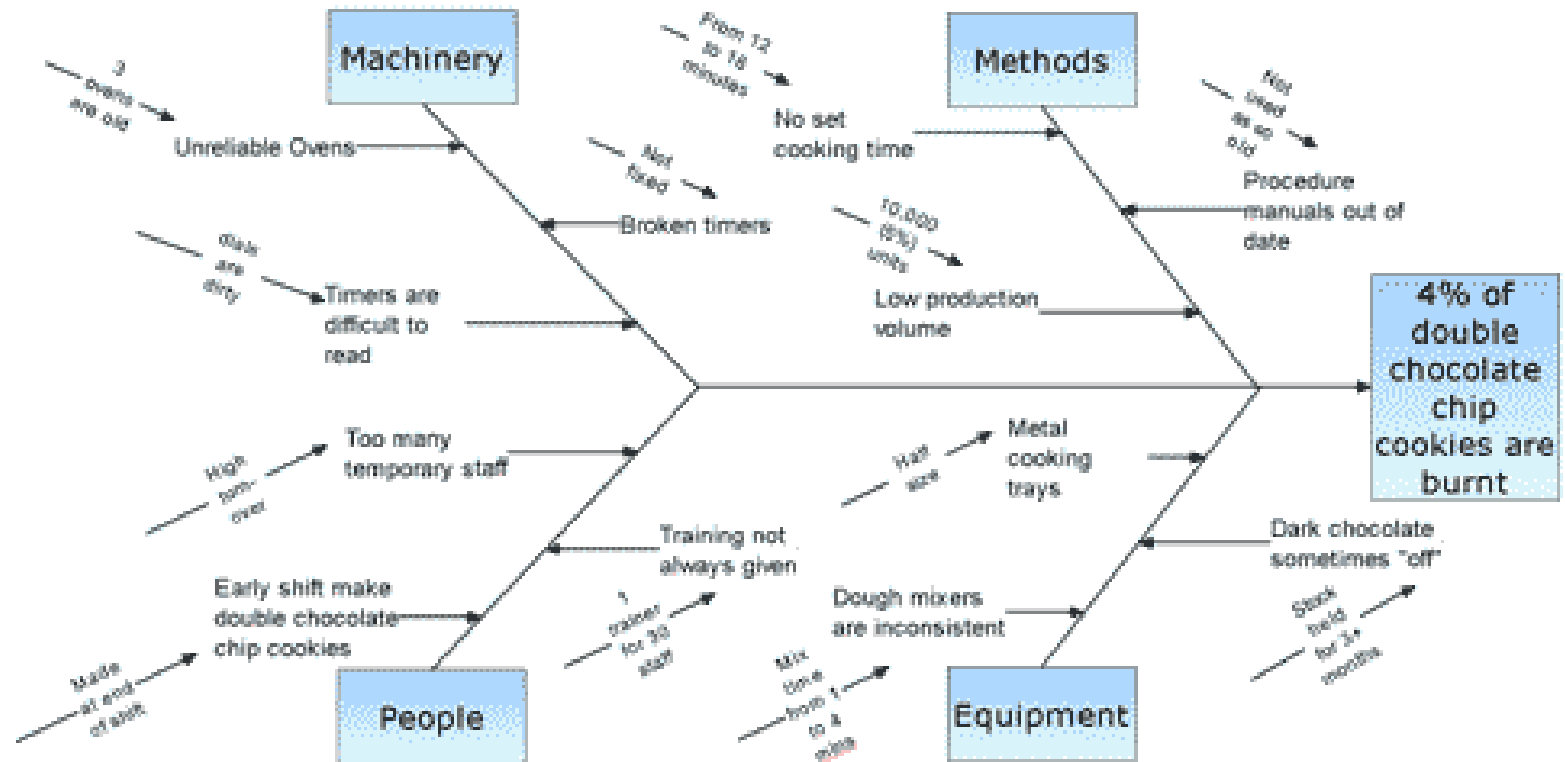
Has this ever happened to you?

- The vehicle will not start. (the problem).
- *Why?* - The battery is dead. (first why)
- *Why?* - The alternator is not functioning. (second why)
- *Why?* - The alternator belt has broken. (third why)
- *Why?* - The alternator belt was well beyond its useful service life and not replaced. (fourth why)
- *Why?* - The vehicle was not maintained according to the recommended service schedule.

Fishbone (Ishikawa) Diagram

- It's called a fishbone because it has a Head (the problem) and then we go down the spine to see all the smaller bones (the potential causes).
- This can be a GREAT visual tool...and by the way, visual is MUCH better to use!!
- Example follows...

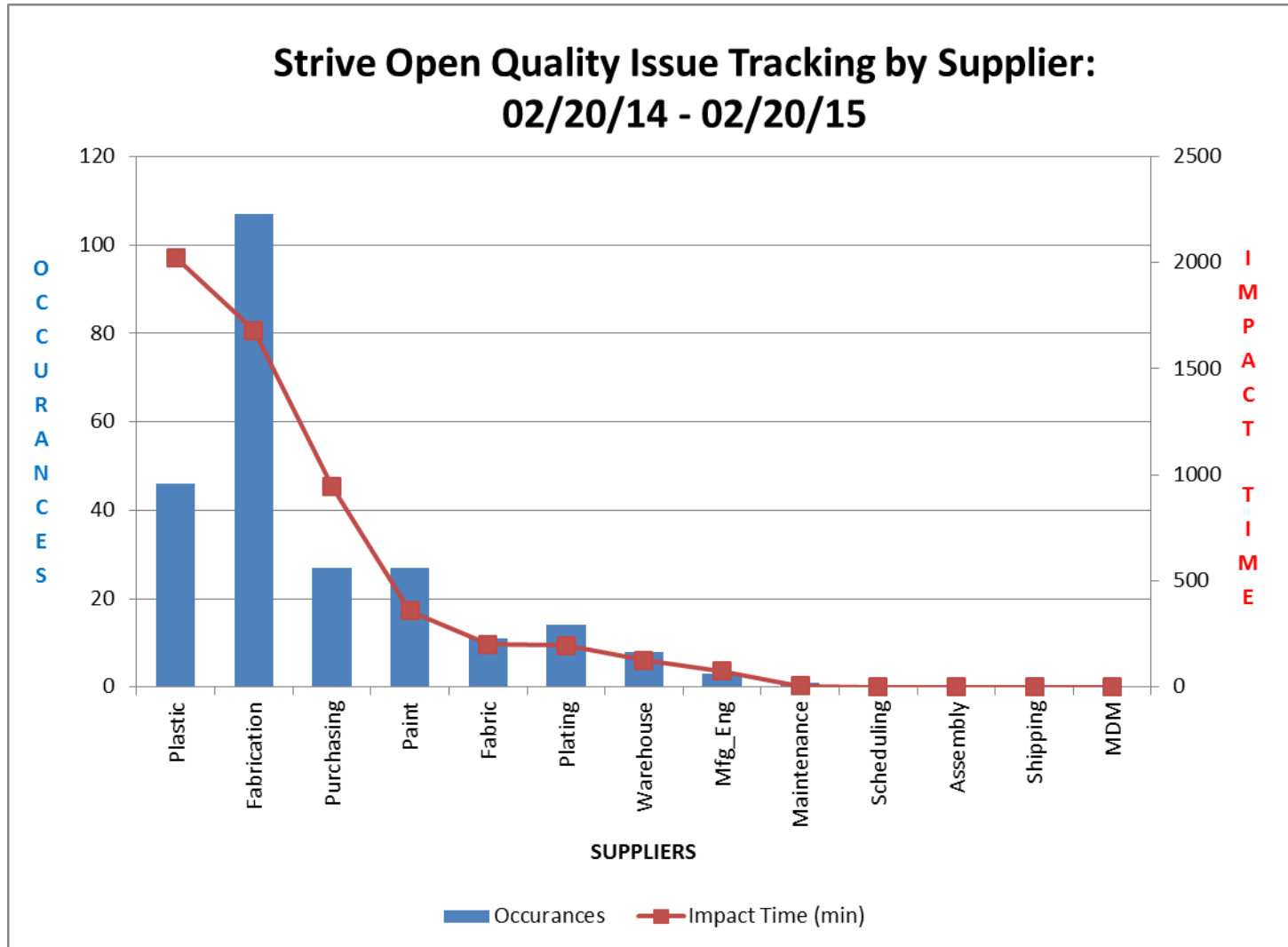
Fishy...



Pareto Analysis

- What is the priority?
- What is the largest contributing problem?
- Data generated solutions are much more impactful and sustainable!
- Example...

A Nice Bar Chart...



Process Mapping

- A wonderful VISUAL approach to looking at the flow of a process.
- Post-It Note® approach
- Do you use this in the workplace at all?
- Example

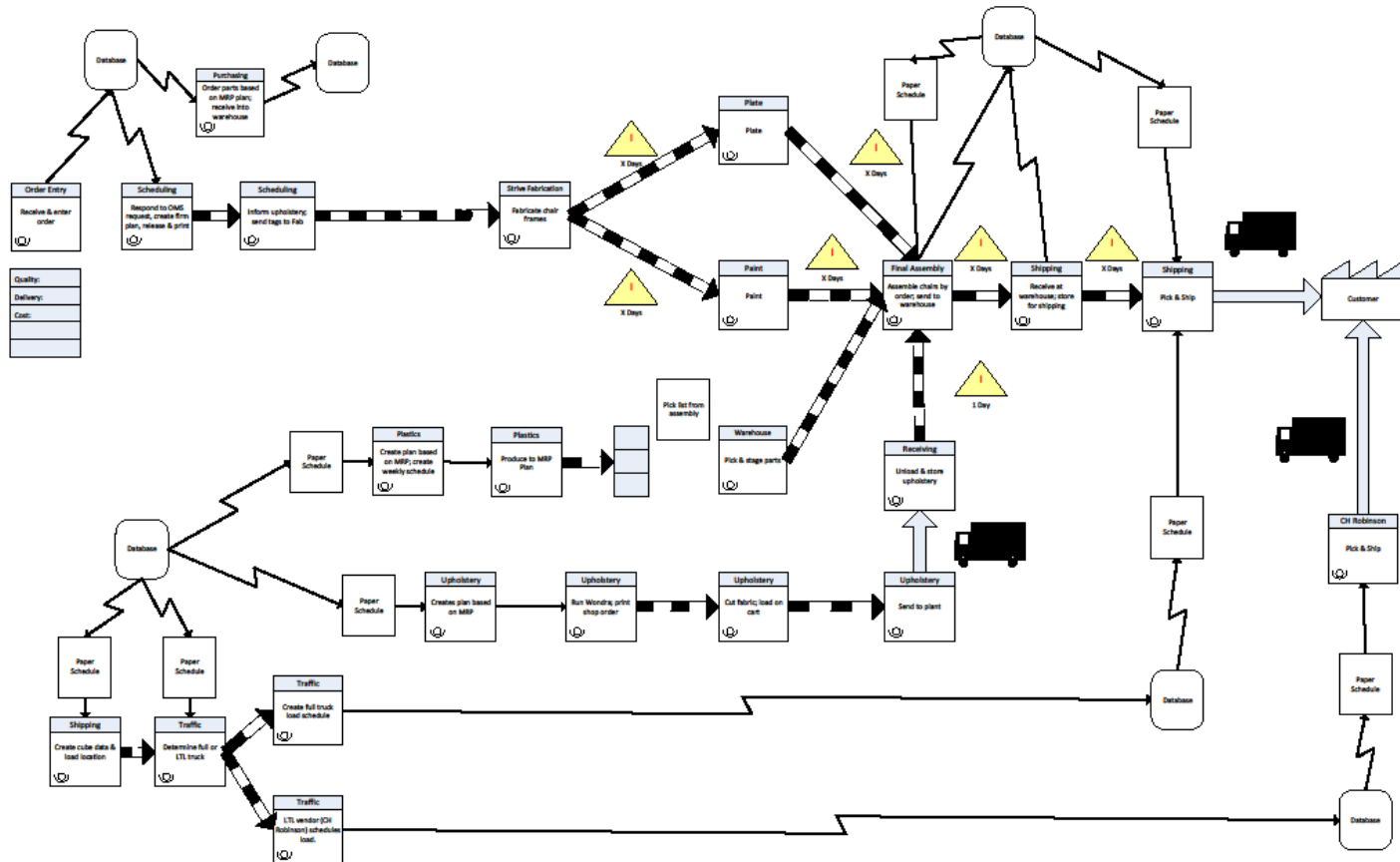
A Map to the solutions...

Scope:

Start: Order Entry

End: Shipment

Strive Current State Value Stream Map



Brainstorming

- Two Heads are BETTER than
- RULES to follow:
 - Participate 100%
 - No Filter – Free Flow of Thought
 - Flip Chart all Ideas for all to see
 - There are NO bad ideas!!! Debate the suggestions AFTER they have all been presented
 - RESPECT others!



Types of Brainstorming

- Structured
 - Take turns...go around the table
 - Passes are allowed
 - One at a time
- Unstructured
 - Free for all...
 - With respectful interaction
 - Juggling...

Action Item List

- If you decide on an action, how is it going to get done?
- All of this thinking is wonderful...until it's time to actually do it and then it falls apart!
- ASSIGN specific tasks to INDIVIDUALS with TIMELINES for completion...
- See the example next!

A Simple Matrix...VERY Useful

CI Action Plan		TEAM	Leader	<i>Casters Incident Rate</i>									
Updated	2/20/2015	Green Bay	Tim Heyrman										
Event Project Do-It	<i>Reduce Caster and Blade Base Incidents by 5% from 2012</i>												
	Short Description	Details	Who	Plan Dates		Expected Benefit	Status	Plan/DO					
				Start	Finish			Check/Act					
X	ISTA Level 2C	Test all products to ISTA Level 2C	Heyrman	3/28/12	12/31/13	Reduce incident rate	Ongoing	P	D	C	A		
X	Caster Pull Forces	Determine minimum caster pull-out force required and verify all products meet this standard.	Heyrman	3/28/12	6/30/12	Reduce incident rate	Minimum force of 50 lbs established	P	D	C	A		
X	Caster Assembly	Evaluate caster assembly methods to determine if improvements can be made.	Wotruba	3/28/12	5/18/12	Reduce incident rate	Assembly tools implemented in all areas	P	D	C	A		
X	Caster Production	Understand vendor production, quality inspections and testing.	Heyrman	3/28/12	5/18/12	Reduce incident rate	Vertical 10# weight from 20". Horizontal - 10# weight from 5".	P	D	C	A		
X	Caster testing	Evaluate caster test standards and determine if non-standard tests are required. Determine test frequency.	Heyrman	3/28/12	3/31/13	Reduce incident rate	Testing completed at vendor, on hold for KI.	P	D	C	A		
X	Blade Base testing	Evaluate blade base test standards and determine if non-standard tests are required.	Heyrman	3/28/12	3/31/13	Reduce incident rate	On hold.	P	D	C	A		

Track your Progress for the actions

CI Action Tracking									Leader			Casters Incident Rate				2013	
									Tim Heyrman								
<div>Insert New Driver</div>				Deliverables													
Driver Numbers		Targets or Limits			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Events	0		plan		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
		actual		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
		ytd +/-		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Projects	11		plan		0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	
		actual		0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	
		ytd +/-		0.0	0.0	0.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	
Do-Its	0		plan		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
		actual		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
		ytd +/-		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Insert LESS THAN (<) Watch Indicator				Insert GREATER THAN (>) Watch Indicator													
YTD Watch Indicators	Targets or Limits				Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
06.0812 incidents 26" KI base	<	1.3		plan	1	1	1	1	1	1	1	1	1	1	1	1	
			actual	2	3	0	4	1	1	1	2						
06.0824 incidents 24" KI base	<	4.7		plan	5	5	5	5	5	5	5	5	5	5	5	5	
			actual	2	5	4	1	3	3	2	3						
46.2994 incidents 24" Strive base	<	0.4		plan	0	0	0	0	0	0	0	0	0	0	0	0	
			actual	0	0	0	0	1	1	1	0						
46.2995 incidents 26" Strive base	<	1.3		plan	1	1	1	1	1	1	1	1	1	1	1	1	
			actual	3	2	0	0	2	0	1	1						
09.0009 incidents 50 mm hard wheel	<	0.6		plan	1	1	1	1	1	1	1	1	1	1	1	1	
			actual	1	1	1	0	0	0	0	0						

Implementation...PDCA



Wrap Up

Next Steps:



What are two things you are going to attempt to do differently as it relates to problem solving?