NC Circle Training
Module 3: Project Circle Process

Project Process Steps

1. Team Development
2. Theme Selection
3. Project Statement
4. Activity Plan
5. Situation Description and Analysis
6. Goal(s) and Potential Benefits
7. Objectives Development
8. Develop Improvement Alternatives
9. Decision Analysis
10. Planning Implementation of Best Alternative (PLAN)
11. Testing / Implementation (DO)
12. Implementation Verification (CHECK)
13. Implementation Standardization (ACT)
14. Comparison Summary
15. Activity Plan (Planned vs Actual)
16. Impact Analysis

1. Team Development

What is involved?

Associates unite to reach a common goal

Why do this step?

To define the team's organization, the team member's roles and responsibilities in order to function effectively

1. Team Development

Determine the role of each member

Every team needs leadership. By assessing skills and growth opportunities the team can determine which role each member can fill

- **Leader**: Liaison with management , activity champion, delegate responsibilities
- **Sub-Leader**: Back up to the Leader
- **Secretary**: Keep all meeting minutes, document all circle activities
- **Team Member**: General tasks

REMEMBER – Everyone is responsible to contribute on all assigned tasks regardless of role!

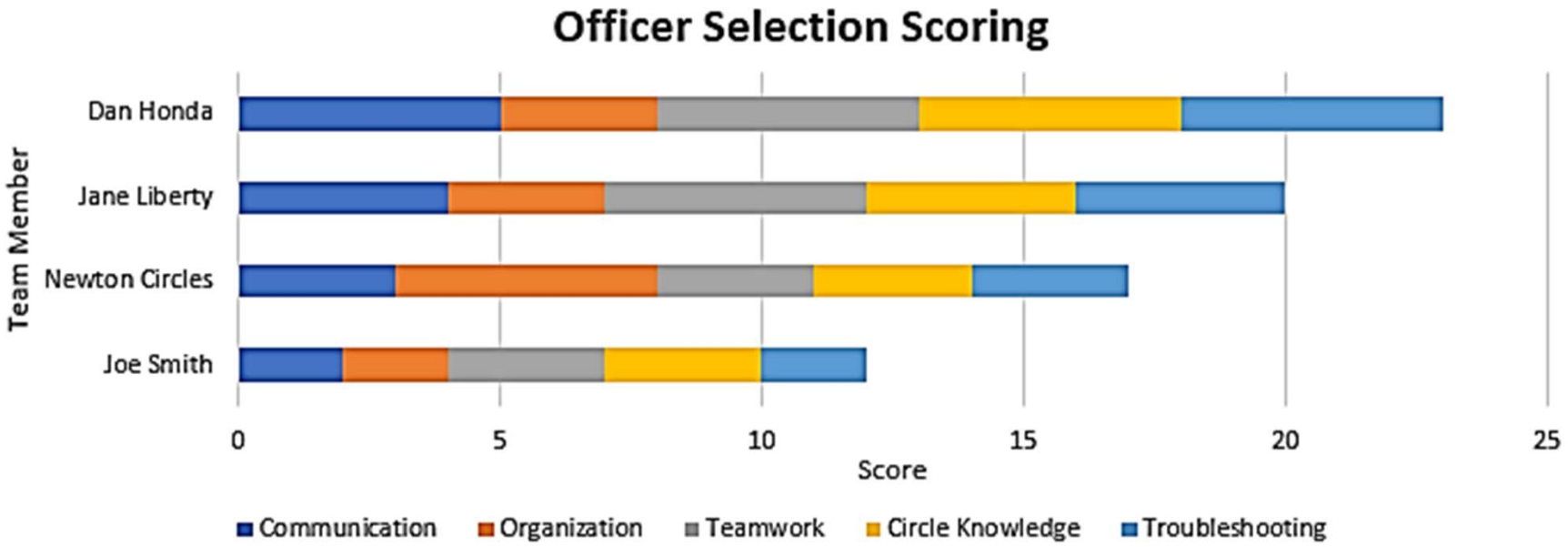
1. Team Development

Determine the role of each member

Build an “Officer Selection Matrix”: chose several categories and have each team member rate themselves as to their abilities in each category

TEAM MEMBERS	COMMUNICATION	ORGANIZATION	TEAMWORK	NH CIRCLE KNOWLEDGE	TROUBLESHOOTING	SCORE	ROLE
Dan Honda	5	3	5	5	5	23	Leader
Jane Liberty	4	3	5	4	4	20	Sub-Leader
Newton Circles	3	5	3	3	3	17	Secretary
Joe Smith	2	2	3	3	2	12	Member

GRADING SCALE: 5 = High Skill 4 = Good Skill 3 = Average Skill 2 = Low Skill



1. Team Development

Create & sign a Code of Conduct

Documents the expectations of the team members

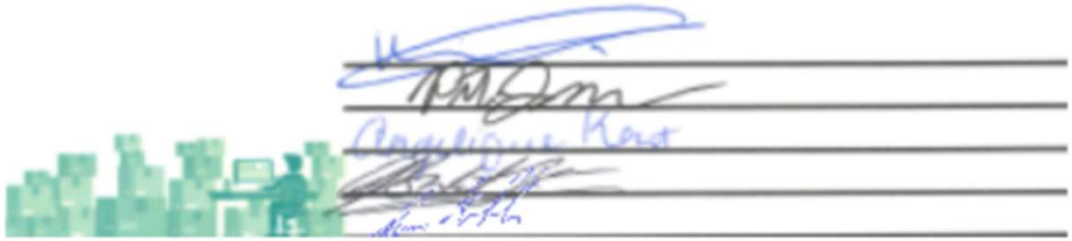
MAKE INVENTORY GREAT AGAIN

LEADER:	WADE HORAN
ASSISSTANT LEADER:	
SECRETARY:	ANGELIQUE KENT
MEMBERS:	ANDY WILSON
	ANDREW MACADAM
	KEAGAN SHAVER
MEETING DAY:	Monday
MEETING TIME:	3:00pm – 4:00pm
MEETING LOCATION:	OSCC2 Odyssey Meeting Room

CODE OF CONDUCT

1) Team members are committed to the team and meeting attendance
2) Team members are treated equally and with respect
3) Team members are to make a decision as a group
4) Team members will positively recognize and thank each other for their contributions
5) Team members will act ethically and observe confidentially agreements
6) Team members are to meet goals while enjoying the experience! 😊

MEMBER SIGNATURES:



1. Team Development

Select a name

- Use brainstorming techniques to come up with potential names
- Names can be generic and used for several circles or can be specific to the particular circle
- Come up with a consensus or majority vote to determine the team name

A Perfect Circle	Packaging Pros
AH-BOO_NIGH	Parts Unknown
A-Train	PC2GO
Auto Doctors	Perfect Balance
Bad News DTRs	Phoenix
Bar None	PRIDE
Beginner's Luck	ProSolutions
Big Wheels	Red Alert
Bin Diver	Rim Reapers
Cases Loaded	Road Warriors
Cheap Trick	Rosebuds
Check Smart	Safety Crew
Checkered Flag	Short Stops
Clean Sweep	Simcoe Green Jays
Clean Up Crew	Simcoe Savers
Combined Effort	Sisterhood of the Travelling Parts
CSA Approved	Special Ops
D.I.C.E	SPS Blizzards
Damaged Goods	SPS Returners
Dude, Where's My Parts	SPS Roadhammers
Dunnages and Dragons	SPS Wrappers
Engineers	SPS.COM
Evolution	Sunny Days
Fantastic Four	Team AWOL
Forkin Around	Team Clue
Four On The Floor	Team Fury
Get Smart	Team Hybrid
Green Lantern	Team S.A.F.E.
Heijunka Engineers	That's A Wrap
High Rollers	The Challangers
Hot Wheels	The Cruisers
ICHIBAN	The Currents
Inner Circle	The Eager Beavers
Inspector Gadget	The Eggstravagant Four
It's About Time	The Fierce Competitors
Kickin Tires	The Lost Boys
MacGuyvers	The Lug Nuts
Make Inventory Great Again	The Ninjas
Manual Override	The Pack
Master Minds Project	The Papercutters
Misdirect This	The Richard Simmons Project
Missing in Action	The Tuggernauts
Miss-Pack, Man	The Underdogs
Newbies	The Usual Suspects
Nights of the Living Dead	Then Backups
Off The Wall	Three Amigos
Office Monkeys	Visonaries
One Of A Kind	Wheels In Motion
Out Of Control	Wrap It Up
Out On Time	Yellow Brick Road

1. Team Development

Tools suitable for this step:

- Brainstorming
- Selection Matrix
- Graphs

TEAM MEMBERS	COMMUNICATION	ORGANIZATION	TEAMWORK	NH CIRCLE KNOWLEDGE	TROUBLESHOOTING	SCORE	ROLE
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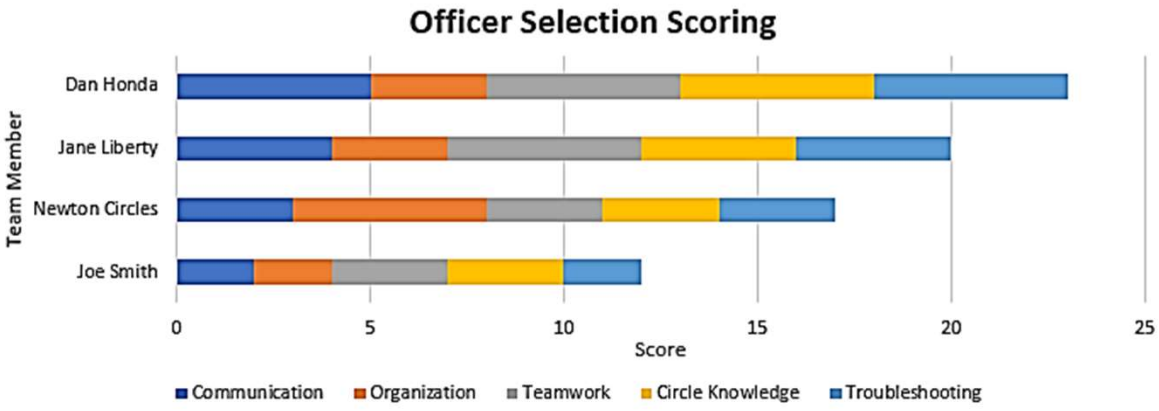


2. Theme Selection

What is involved?

Team identifies a circle theme and how it will support the department or company business plan

Why do this step?

To prove the need to address a current issue and the fact that it supports the business plan

No	Suggested Themes	Proposed By
1.	INCREASE PRODUCTIVITY	SUHAIMI
2.	REDUCE DOWNTIME	RAZIB
3.	REDUCE REJECTION	FIZAL
4.	REDUCE CUSTOMER COMPLAINT	FAIZAL

ALL SELECTED THEMES IS CLOSELY RELATED TO DAILY TASKS

2. Theme Selection

Determine a focus for the circle

- Use brainstorming techniques to come up with ideas for themes
- Develop a selection matrix, list all the ideas in the left hand column and score each idea against each category

THEME IDEA	IF SITUATION IS IMPROVED BENEFIT		IF NOTHING IS DONE NEGATIVE IMPACT		ACHIEVABILITY	TOTAL
	ASSOCIATES	BUSINESS	ASSOCIATES	BUSINESS		
Damaged parts	3	5	1	5	2	16
Equipment downtime	1	4	1	3	2	11
Reorganize area	5	4	5	3	5	22

SCALE: 5 = Very High 4 = High 3 = Medium 2 = Low 1 = Very Low

2. Theme Selection

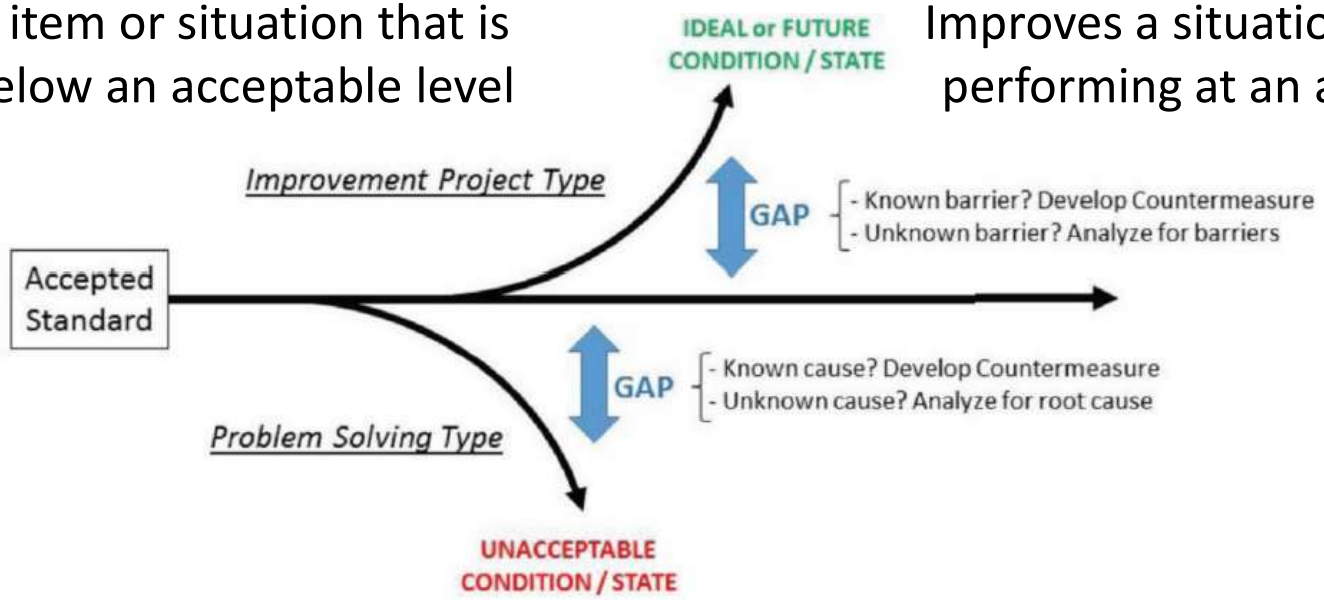
Determine whether the selected theme is a problem circle format or a project circle

Problem Solving Format

Addresses an item or situation that is performing below an acceptable level

Project Format

Improves a situation that is already performing at an acceptable level



CAUTION! CHANGE POINT FOR 32KI BELOW!

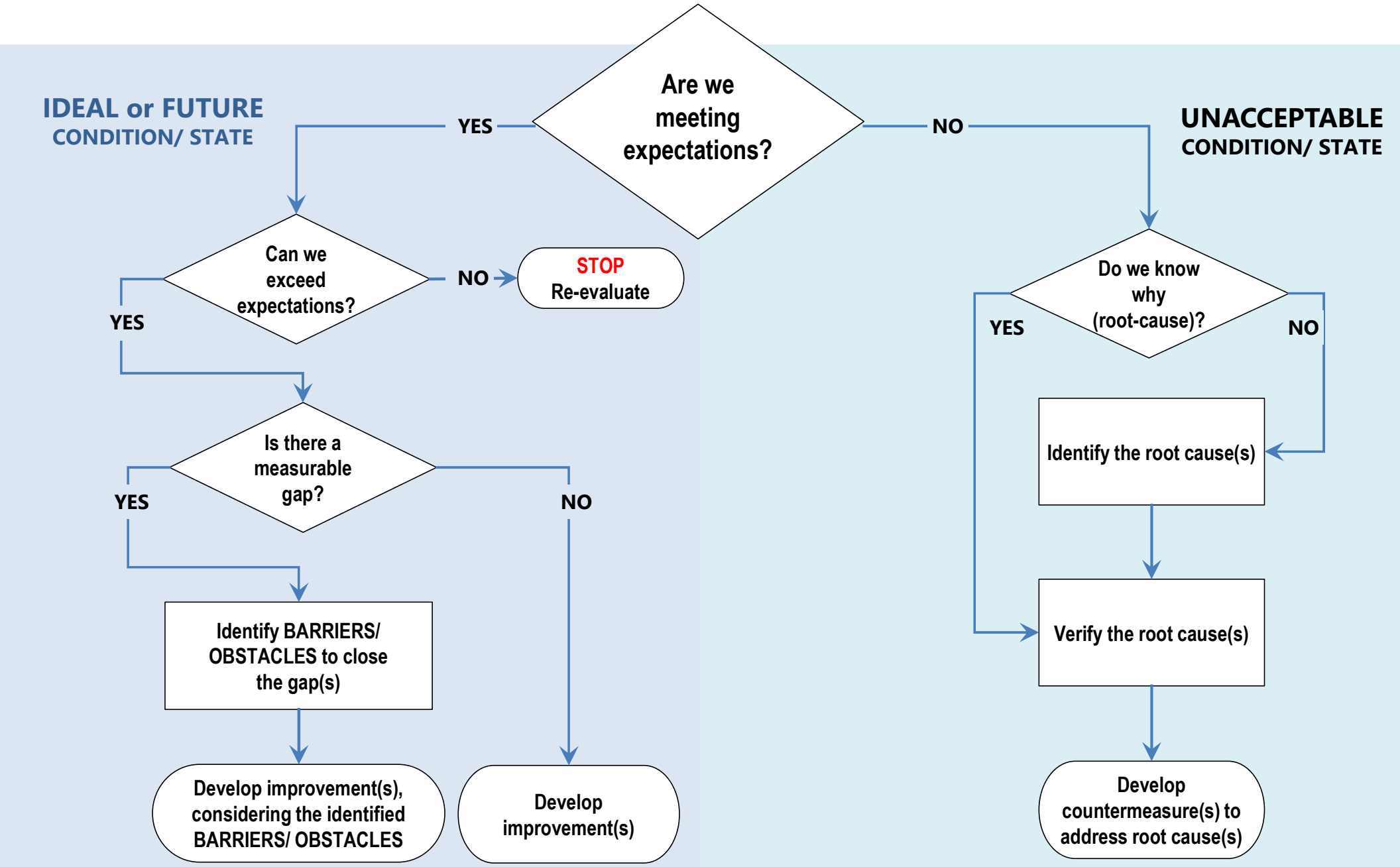
If there is **NOT** a SPOS or procedure for your chosen theme, it does **NOT** automatically mean the Circle is a PROJECT CIRCLE

The lack of a standard may identify an ***UNACCEPTABLE CONDITION/STATE*** meaning the Circle should be classified as a **PROBLEM CIRCLE**

2. Theme Selection

Improvement **Project** *Circle*

Problem-Solving *Circle*



2. Theme Selection

Identify stakeholders of the circle

- May have to be consulted during circle activity

Potential Stakeholder Examples

Associates	Customer	Management	Sister Companies
Associates' Families	Community	Shareholders	Specific Departments

2. Theme Selection

Establish theme's link to Business Plan

- Theme ***must*** tie into company business plan for the fiscal year to ensure that circle activity aligns with company goals

S Safety

E Environment

Q Quality

C Cost

D Delivery

M Management

2. Theme Selection

Helpful hints for this step:

- Themes involving company policies or benefits, personal, social, economic or political issues are not appropriate
- See the team's facilitator or executive sponsor for business plan tie ins
- Extract and include the excerpts of the business plan that the theme ties into

2. Theme Selection

Tools suitable for this step:

- Brainstorming
- Selection Matrix
- Graphs

THEME IDEA	IF SITUATION IS IMPROVED BENEFIT		IF NOTHING IS DONE NEGATIVE IMPACT		ACHIEVABILITY	TOTAL
	ASSOCIATES	BUSINESS	ASSOCIATES	BUSINESS		
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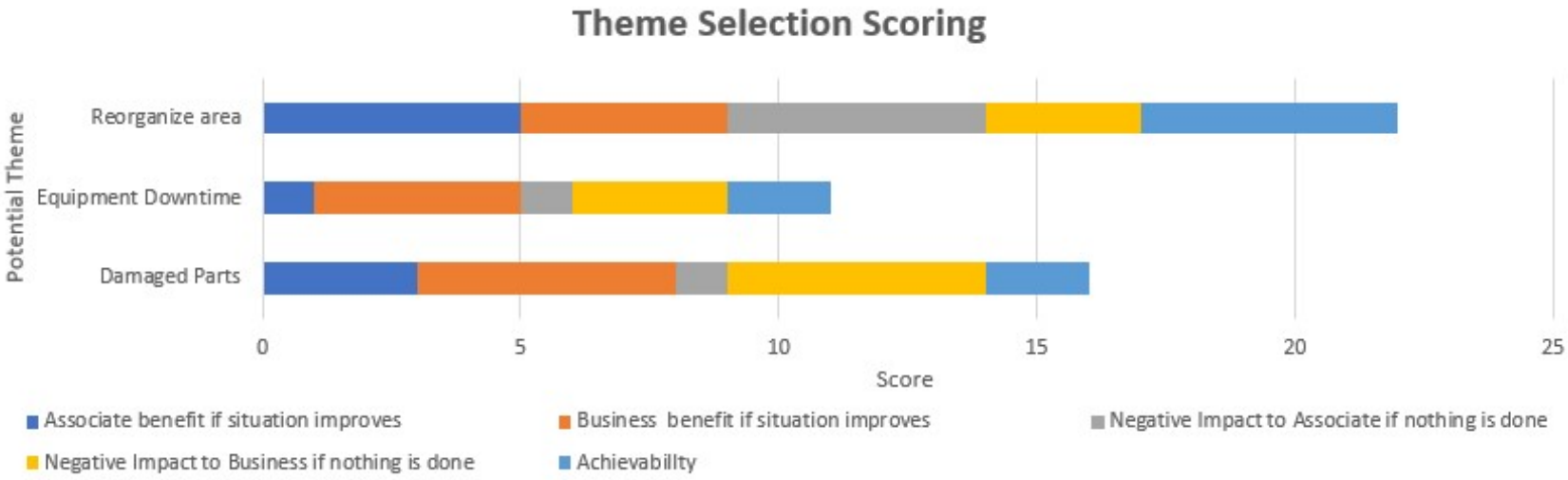


3. Project Statement

What is involved?

The team writes a project statement in order to communicate the performance requirements and parameters

Why do this step?

To help focus the team on what its mission will be

3. Project Statement

Create a project statement including;

- an Action
- an Object
- an Accomplishment
- a Completion date
- Cost constraints

Function	Item
Action	Implement
Object	AS400 Production Inventory
Accomplishment	Remove serial numbers that have already been shipped after scanning system goes down
Completion Date	February 6th 2019
Budget	$4,000.00

Make Inventory Great Again shall implement a proper inventory correction system in the AS400 that will remove shipped serial numbers during network outages on or by Feb/6th/2019 at a cost of no more than $4,000.00

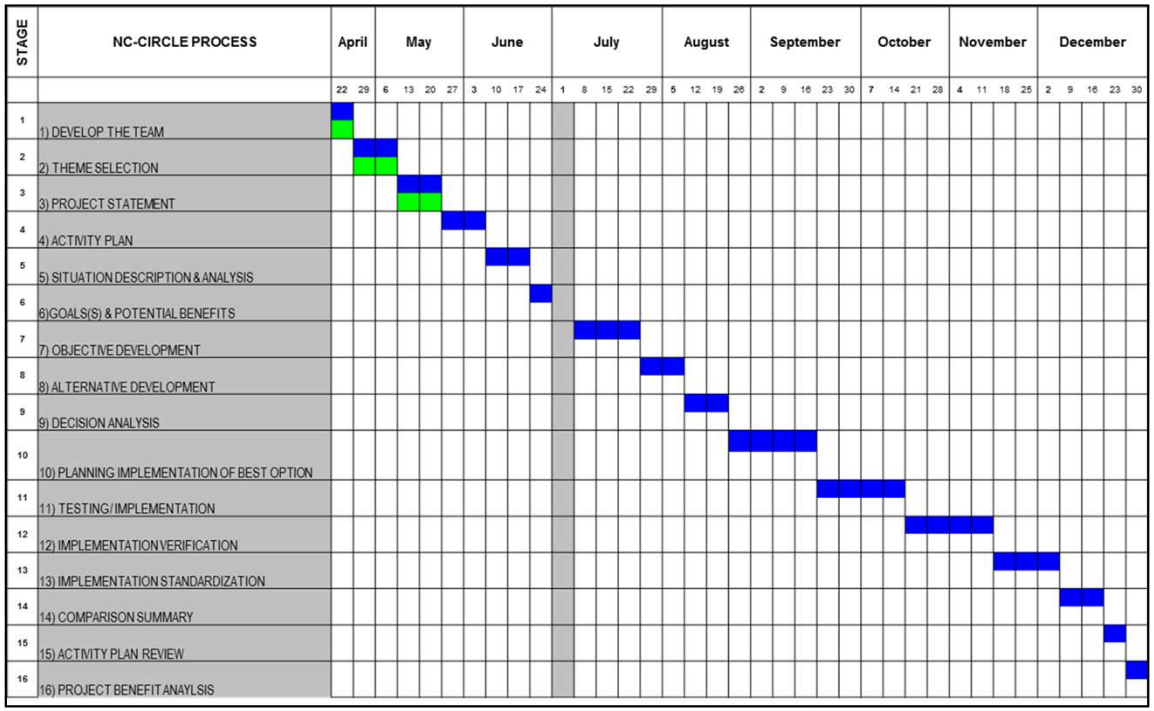
4. Activity Plan

What is involved?

The team develops an activity schedule

Why do this step?

To establish timeframes for the completion of each step and keep the circle on target for completion



4. Activity Plan

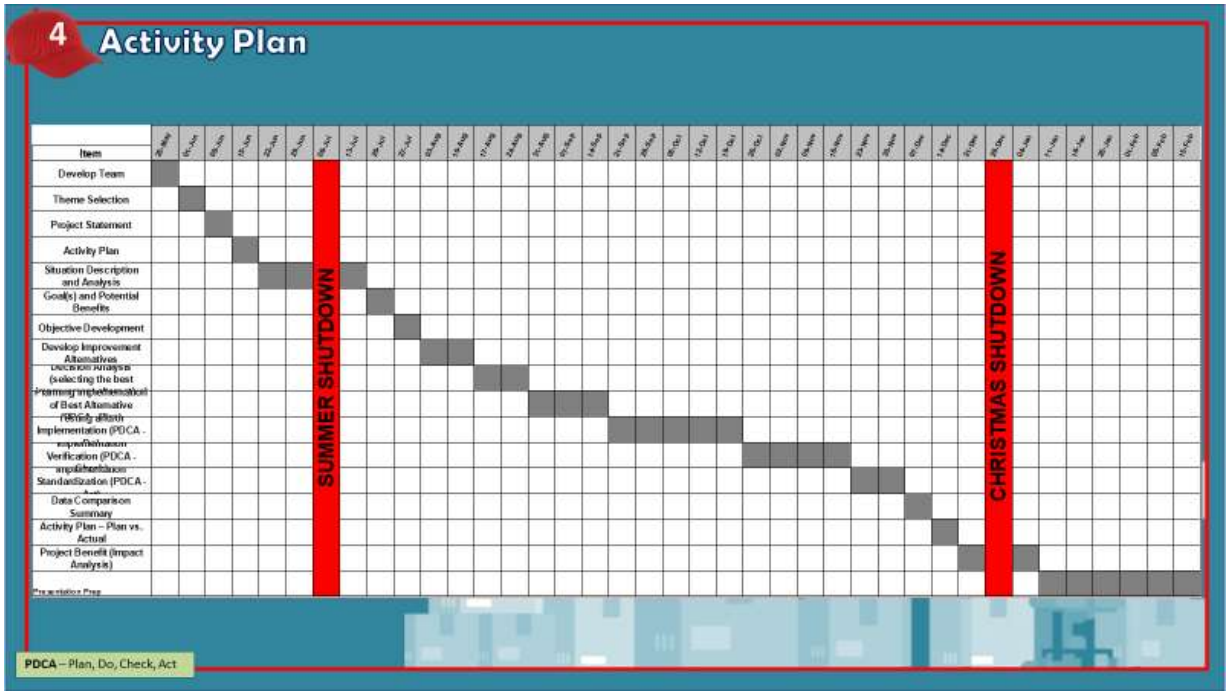
Establish an activity plan to track progress

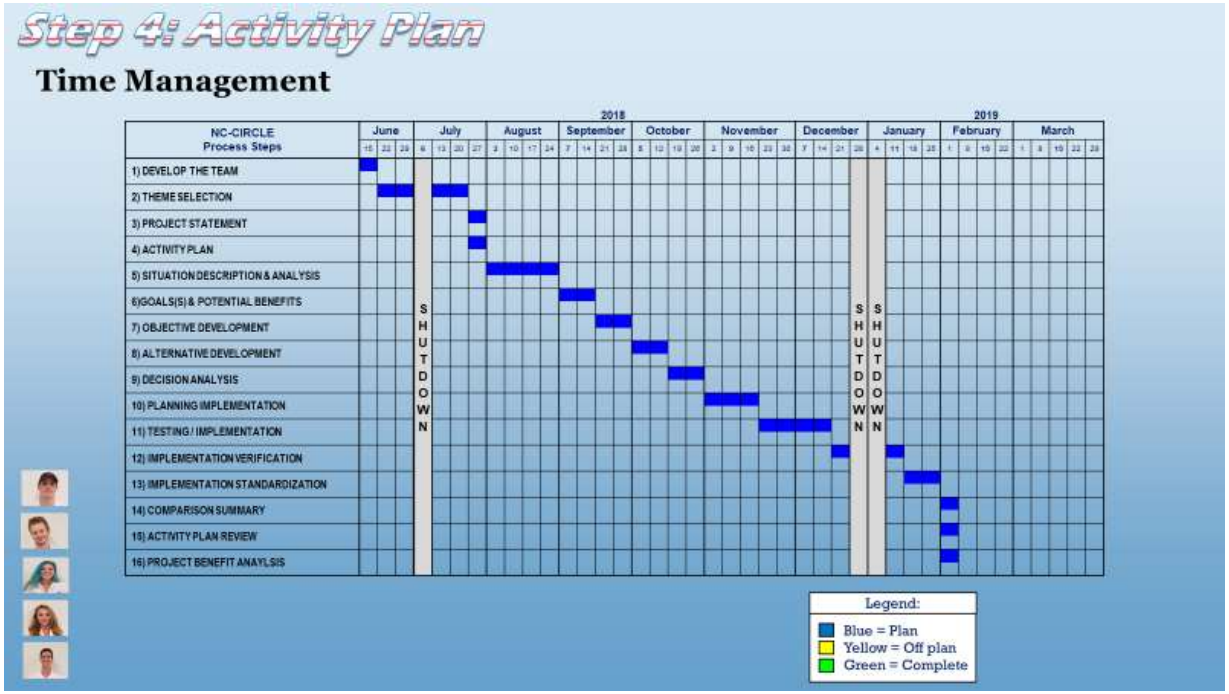
- Create a Gantt Chart with the calendar across the top row and the required steps/tasks in the far left column
- Identify an expected completion date and make it the far right column of the chart
- Working backwards from the completion date plot the duration of each step/task on the chart
- Keep two copies of the activity plan
  - A copy with the planned schedule on it only to show for this step in the presentation
  - A working copy that is used to track the actual progress of the project to show at Step 15 in the presentation

4. Activity Plan

Tools suitable for this step:

- Gantt Chart





5. Situation Description & Analysis

What is involved?

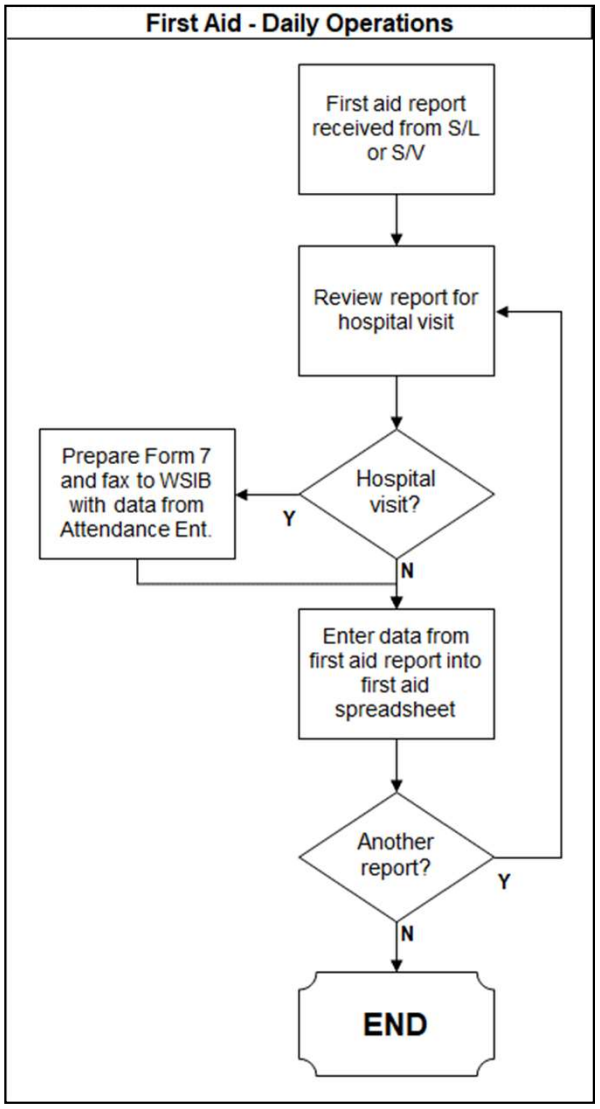
The team prepares both visual and data descriptions of the current situation and identified improvement opportunities

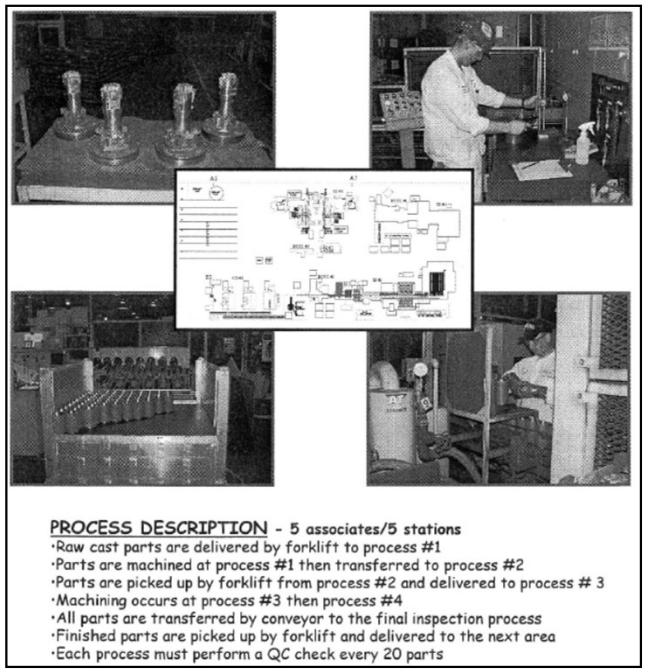
Why do this step?

To ensure that all team members have a thorough understanding of the baseline data which is needed to measure improvements

5. Situation Description & Analysis

Determine the best method for visually describing the current situation





PROCESS DESCRIPTION - 5 associates/5 stations
- Raw cast parts are delivered by forklift to process #1
- Parts are machined at process #1 then transferred to process #2
- Parts are picked up by forklift from process #2 and delivered to process # 3
- Machining occurs at process #3 then process #4
- All parts are transferred by conveyor to the final inspection process
- Finished parts are picked up by forklift and delivered to the next area
- Each process must perform a QC check every 20 parts

5. Situation Description & Analysis

Provide a data description of the current situation

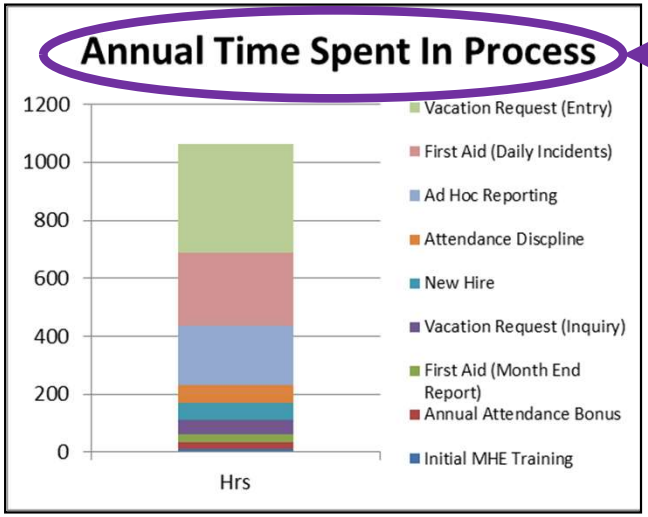
- To focus on the correct data go back to the project statement and ask:
  - What are the improvement opportunities related to the teams' desired accomplishment
  - How will the current situation of these opportunities be measured?
- The answers to these questions will become the data description; display the data in appropriate graphs

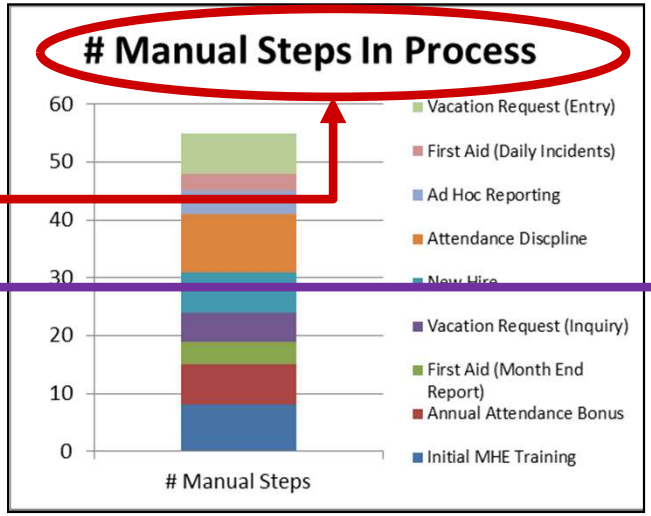
5. Situation Description & Analysis

Provide a data description of the current situation

Project Statement
The Office Monkeys' goal is to select and implement an Human Resources Information System to improve the quality, delivery and timelinessof critical human resources databy April 1st, 2008
Business Initiative
The goal of this initiative is to reduce duplicate entries, manual inputs and calculations and to improve response time to associate and management requests for data
What are the improvement opportunities related to this business initiative?
1) Reduce duplicate entry of data points into different systems 2) Reduce excessive delays in reporting data due to searching for data and issues resulting from lack of cross training 3) Reduce the opportunity for errors due to manual inputs
How will the current conditions of these improvement opportunities be measured?
By quantifying the time and steps spent inputting data for each process flow

Data Process Flow	Calculation	Time Spent On Process Annually (hrs)	Number Of Manual Steps
New Hire	50 associates/yr @ .75 hrs	37.5	7
Annual Attendance Bonus	Annually @ 24 hrs	24	7
Initial MHE Training	Monthly @ 1 hr	12	8
First Aid (Daily Incidents)	Weekly @ 5 hours	250	3
First Aid (Month End Report)	Monthly @ 2 hrs	24	4
Attendance Discipline	240 incidents annually @ .25 hr	60	10
Vacation Request (Inquiry)	10 inquiries/wk @ .1 hr	52	5
Vacation Request (Entry)	5 requests/associate annually/500 associates @ .15 hr	375	7
Ad Hoc Reporting	Various	208	4

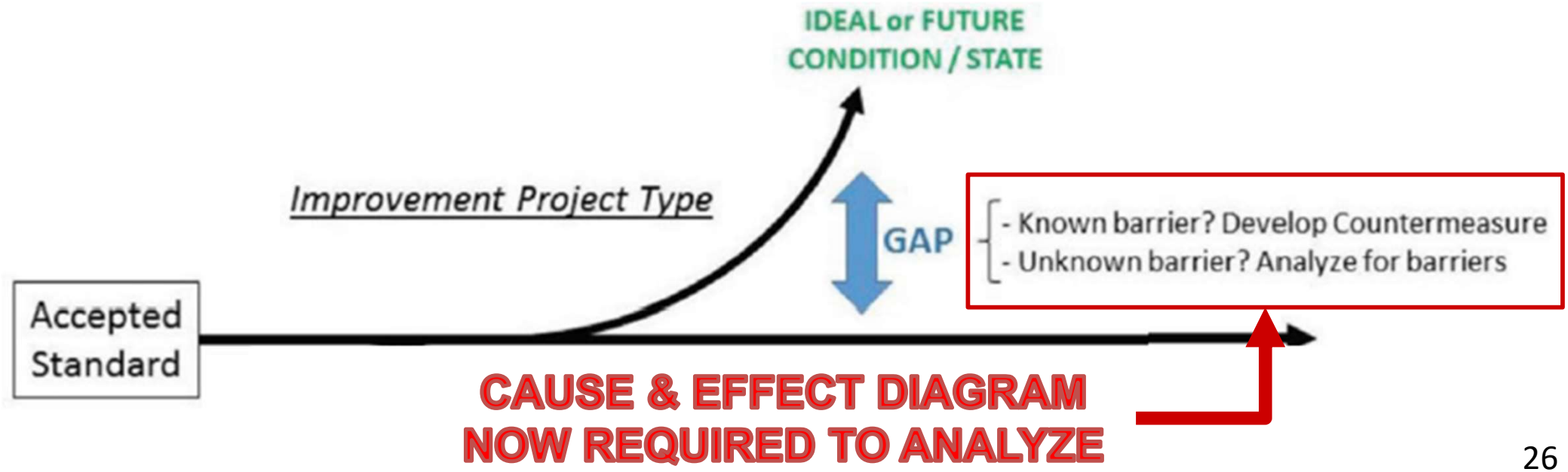




5. Situation Description & Analysis

CAUTION! CHANGE POINT FOR 32KI BELOW!

All Project circles are now required to use a Cause & Effect Diagram to identify potential barriers/obstacles to reaching the ideal state described in the Project Statement



5. Situation Description & Analysis

List & sort all potential barriers of the problem

Brainstorm all potential barriers to reaching the ideal state and categorize them

- Man/Method/Material/Machine
- REMEMBER- a potential barrier may be attributed to more than one category

Man	Method	Material	Machine
Potential Barrier 1	Potential Barrier 1	Potential Barrier 7	Potential Barrier 14
Potential Barrier 2	Potential Barrier 6	Potential Barrier 10	Potential Barrier 15
Potential Barrier 3	Potential Barrier 7	Potential Barrier 11	Potential Barrier 16
Potential Barrier 4	Potential Barrier 8	Potential Barrier 12	Potential Barrier 17
Potential Barrier 5	Potential Barrier 9	Potential Barrier 13	Potential Barrier 18

5. Situation Description & Analysis

Eliminate potential barriers that would not prevent the team from reaching the ideal state using the "Three Reality Principle"

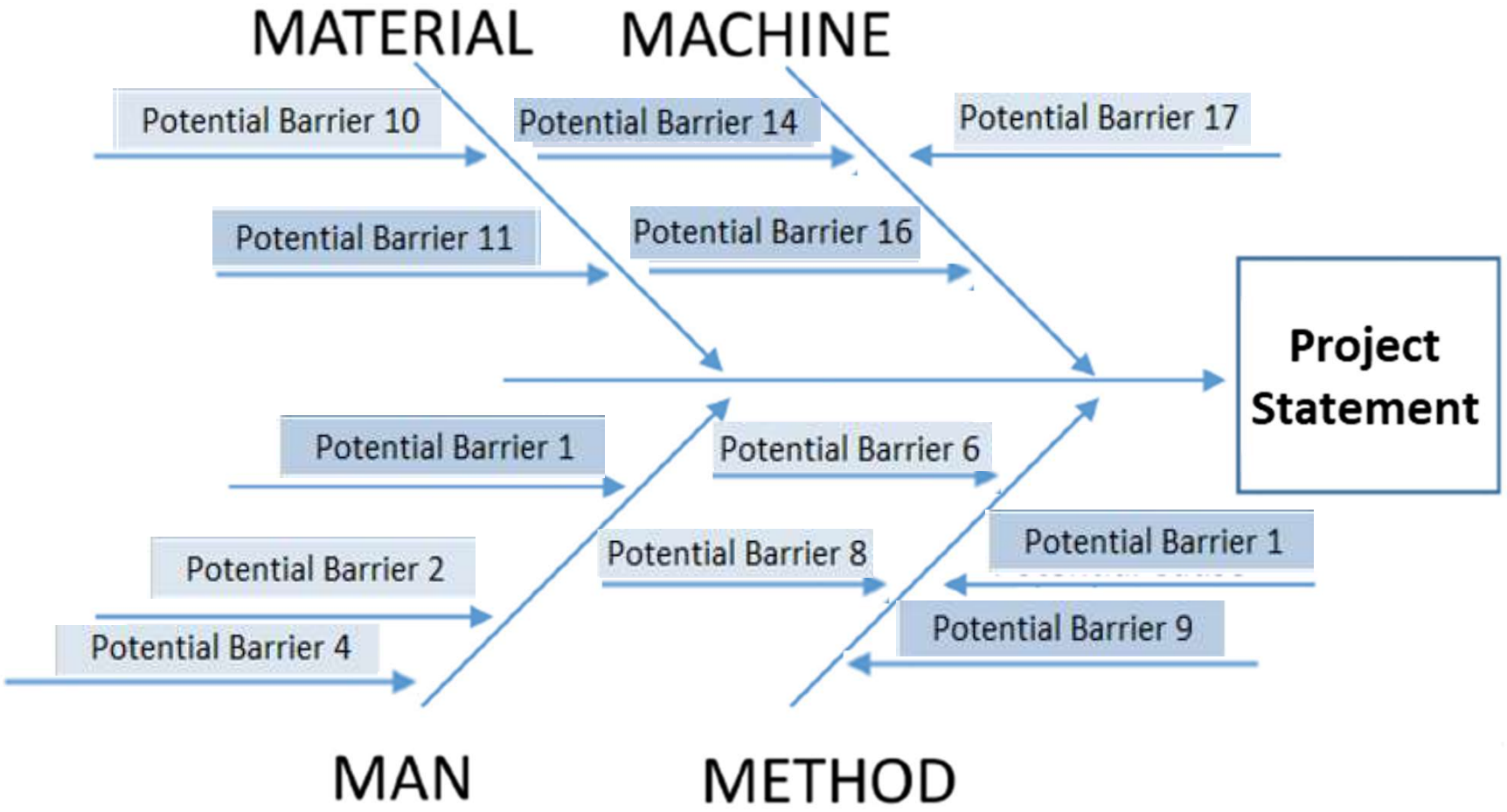
- Go to spot
- Know the actual situation
- Be realistic

Man	Method	Material	Machine
Potential Barrier 1	Potential Barrier 1	~~Potential Barrier 7~~	Potential Barrier 14
Potential Barrier 2	Potential Barrier 6	Potential Barrier 10	~~Potential Barrier 15~~
~~Potential Barrier 3~~	~~Potential Barrier 7~~	Potential Barrier 11	Potential Barrier 16
Potential Barrier 4	Potential Barrier 8	~~Potential Barrier 12~~	Potential Barrier 17
~~Potential Barrier 5~~	Potential Barrier 9	~~Potential Barrier 13~~	~~Potential Barrier 18~~

5. Situation Description & Analysis

Create a Ishikawa (Fishbone) diagram

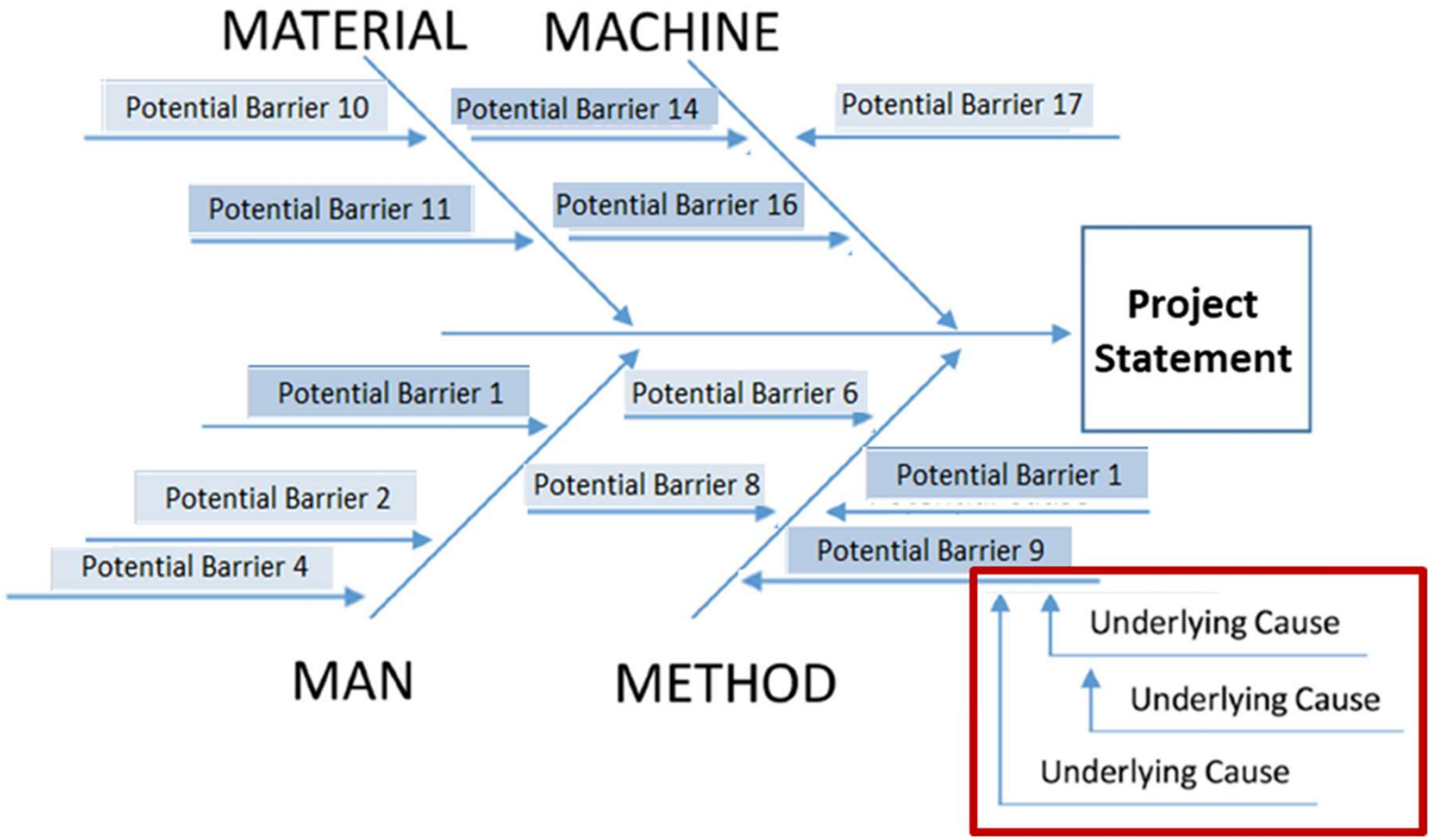
- Enter the project statement and all remaining potential barriers



5. Situation Description & Analysis

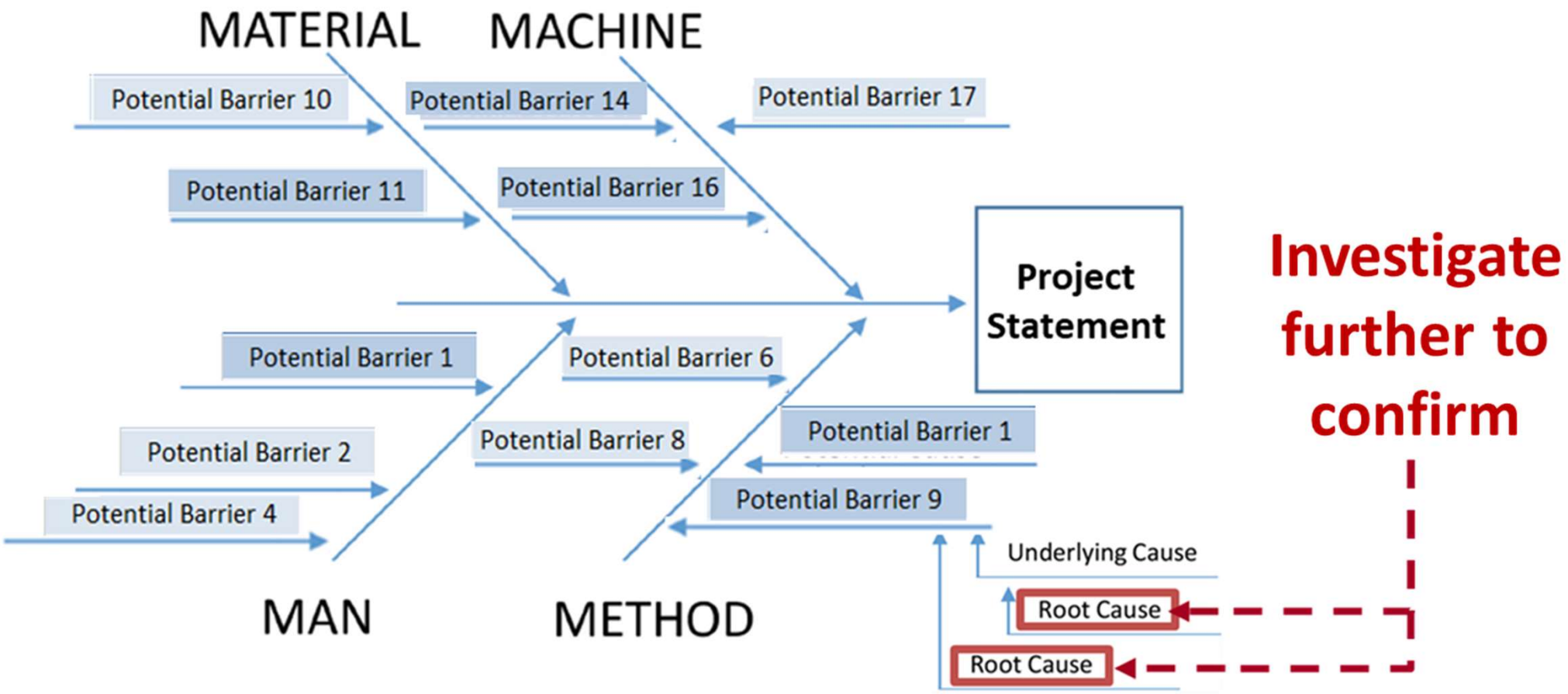
For each potential barrier ask "What could cause this?" or "Why would this happen?"

- Repeat the process until there is no known answer
- Repeat this process for all remaining potential barriers



5. Situation Description & Analysis

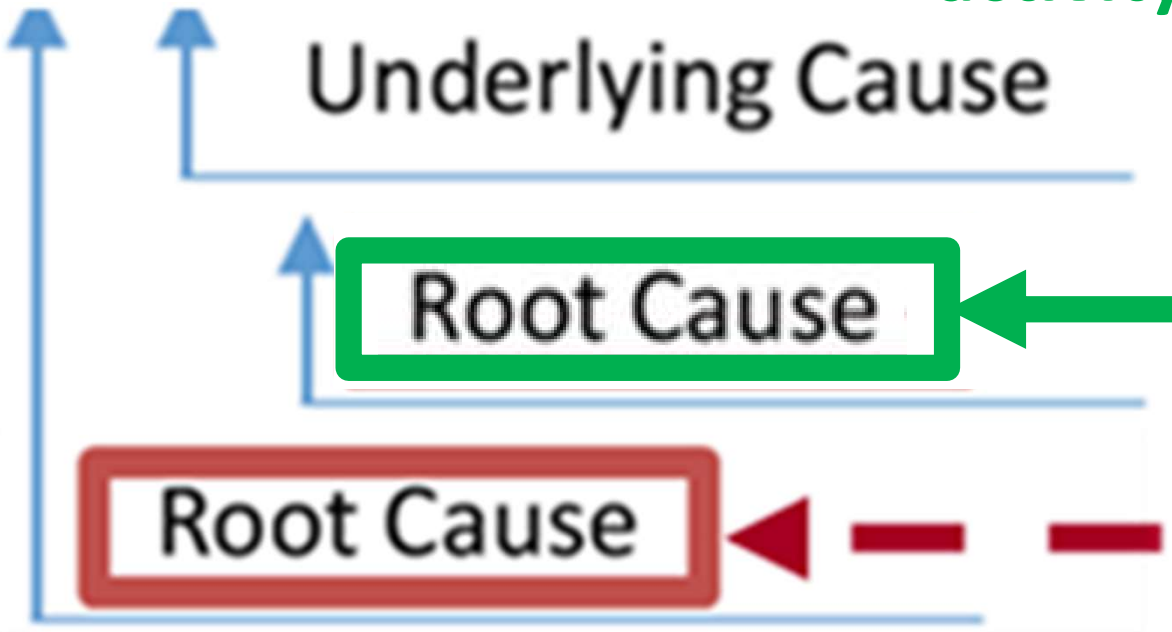
Identify any potential ROOT causes for the remaining barriers



5. Situation Description & Analysis

When developing the improvement to be implemented focus on eliminating the confirmed root cause(s) that prevent the team from reaching the ideal state

Further investigation confirmed root cause of barrier; improvement activity to address root cause

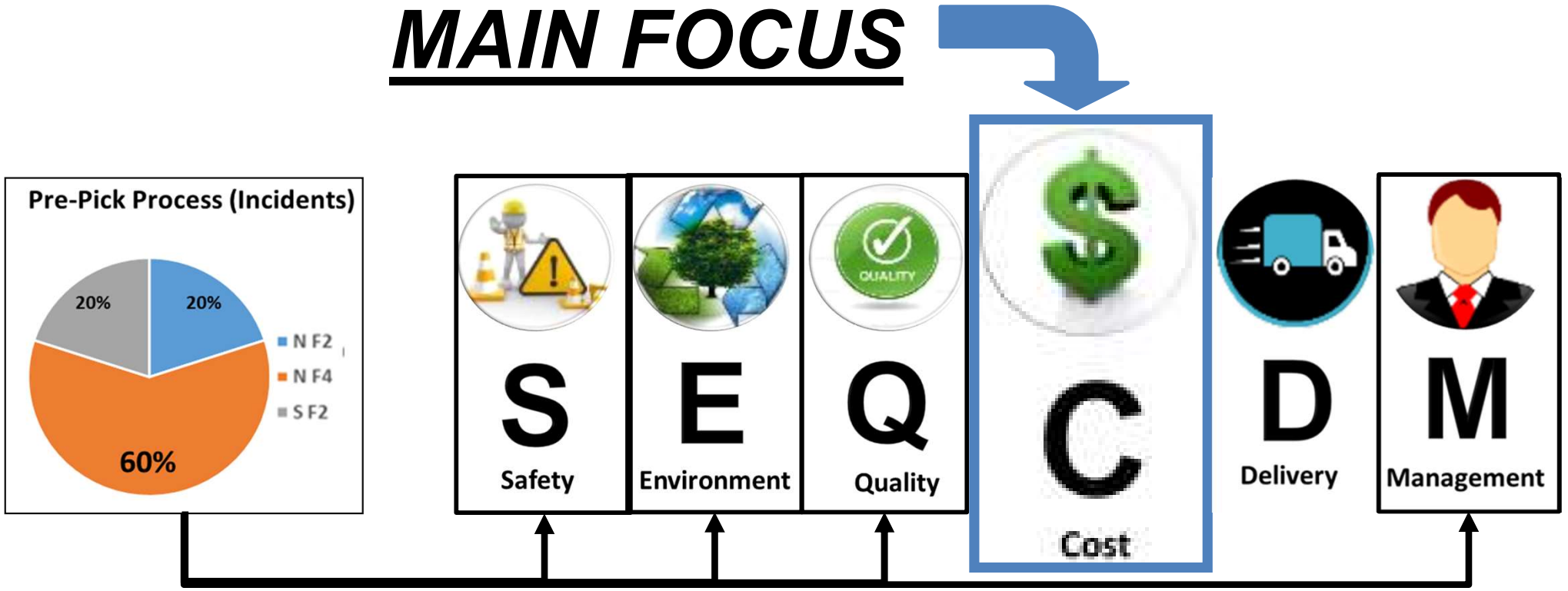


Further investigation eliminated root cause of barrier

5. Situation Description & Analysis

Collect and graph any data that might apply to other areas of the business plan that may be impacted by the circle

MAIN FOCUS

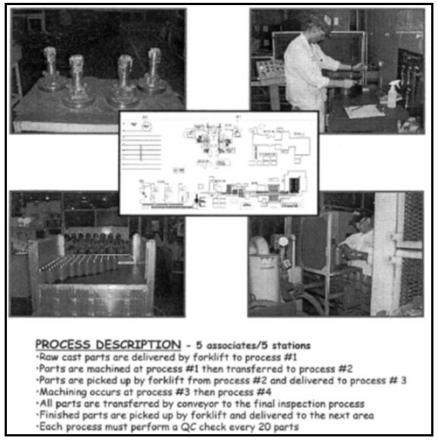


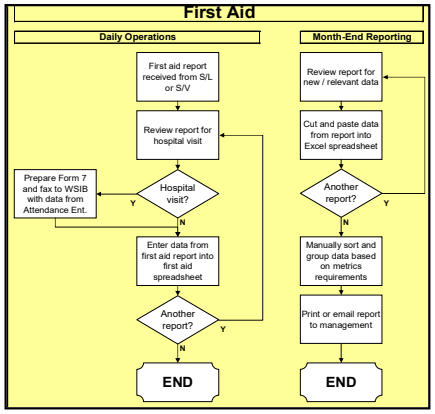
Revisit data from other areas of the business plan at the end of the circle to see if there was collateral benefits

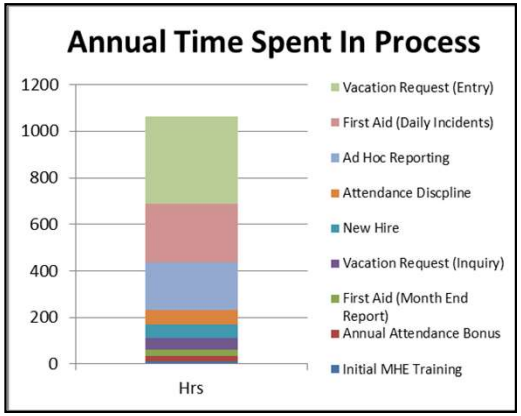
5. Situation Description & Analysis

Tools suitable for this step:

- Process Maps
- Pictures
- Flowchart
- Graphs
- Matrix
- *ISHIKAWA DIAGRAM*







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Attendance Discipline	240 incidents annually @ .25 hr	60	10
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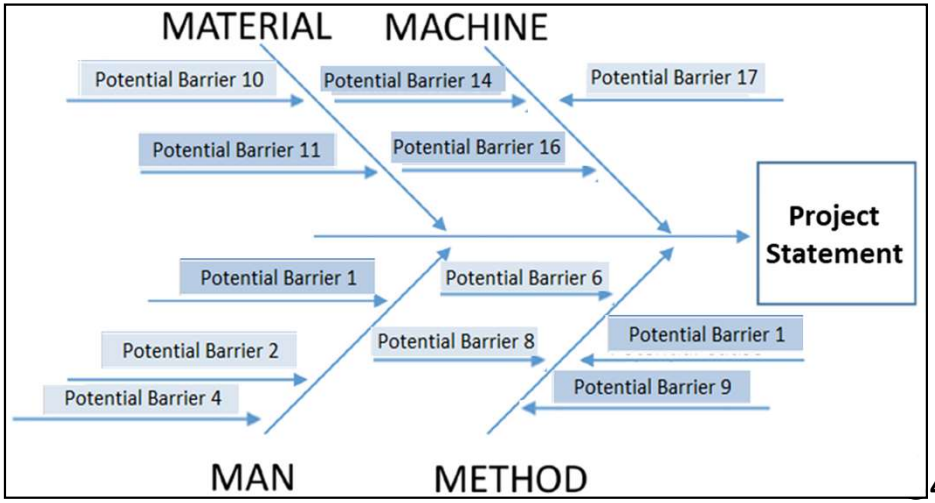


6. Goal(s) & Potential Benefits

What is involved?

The team identifies the primary goals of the project and the tangible and intangible benefits which should be expected once the project is completed

Why do this step?

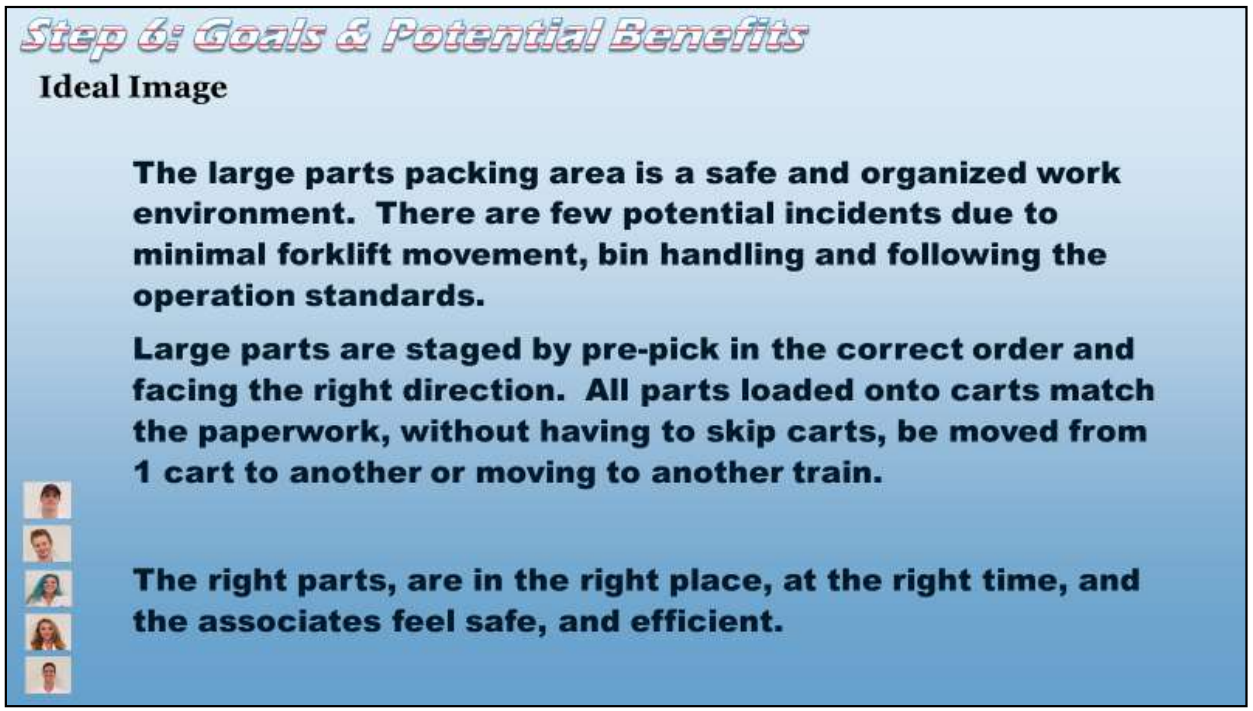
To provide a project target from which to measure the project's degree of success

6. Goal(s) & Potential Benefits

Write an "Ideal Image" statement

- Use the targeted improvement opportunities to develop a statement describing the situation after the improvement has been implemented

Ideal Image Statement
The HRIS system is an efficient and easy to use program that consolidates HR systems reducing overtime, manual data entry and calculations, improves scheduling, access as well as the quality delivery and timeliness of critical HR data.This in turn provides a better decision making tool for Associate Services/Production Support



6. Goal(s) & Potential Benefits

Select from the collected data a meaningful measurable of the current situation that can be revisited to determine success

- Using the “SMART” method, determine a logical goal for the team to meet

6. Goal(s) & Potential Benefits

S Specific	Goal clearly defines expected results	Do: Set real numbers with real deadlines.	Don't: Say, "I want more visitors."
M Measurable	The results can be quantified	Do: Make sure your goal is trackable.	Don't: Hide behind buzzwords like "brand engagement" or "social influence"
A Attainable	Goal challenges but within reach	Do: Work towards a goal that is challenging but possible	Don't: Try to take over the world in one night
R Realistic	Goal relates directly to the problem	Do: Be honest and know what your team is capable of	Don't: Forget to consider any obstacles that may appear
T Time-bound	Goal has a target date for completion	Do: Give yourself a deadline	Don't: Work towards completion "someday"

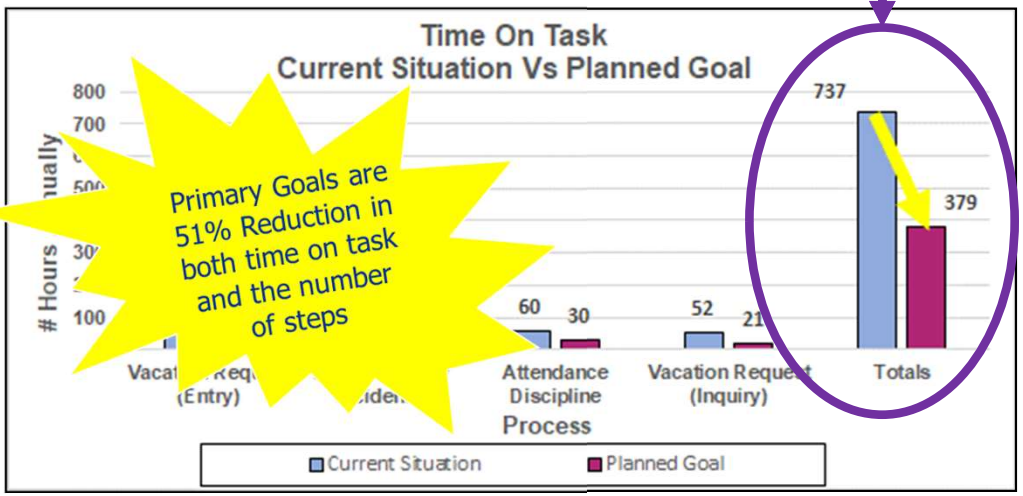
6. Goal(s) & Potential Benefits

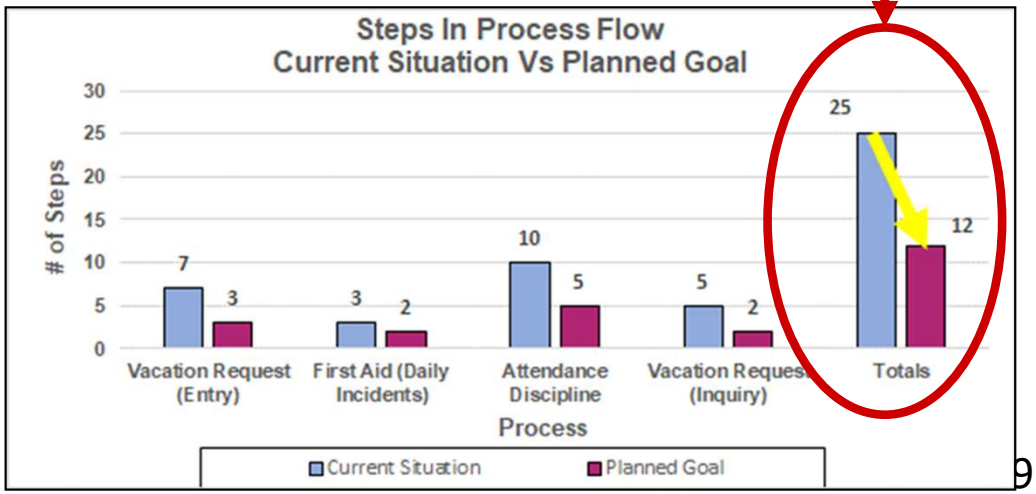
Display the goal(s) on appropriate graphs

Ideal Image Statement

The HRIS system is an efficient and easy to use program that consolidates HR systems reducing overtime, manual data entry and calculations, improves scheduling, access as well as the quality delivery and timeliness of critical HR data.This in turn provides a better decision making tool for Associate Services/Production Support

Data Process Flow	Time Spent On Process Annually (hrs)	Number Of Steps	Time Spent On Process Annually Goal (hrs)	Number Of Steps Goal
Vacation Request (Entry)	375	7	161	3
First Aid (Daily Incidents)	250	3	167	2
Attendance Discipline	60	10	30	5
Vacation Request (Inquiry)	52	5	21	2
Totals	737	25	378	12





6. Goal(s) & Potential Benefits

Identify any other tangible or intangible benefits that may be realized

Step 6: Goals & Potential Benefits

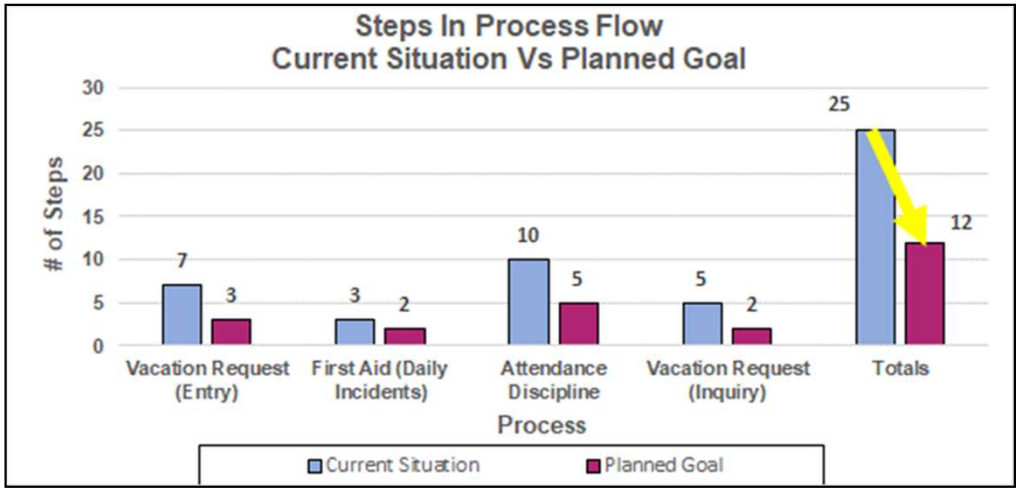
Identify Potential Benefits

Category	Benefit	Tangible or Intangible	Collection Period
SQC	Reduced bin handling - potential spills	T	Aug 24-30
SQD	Proper time for process training	I	
SQD	Proper process and habit training	I	
SQD	Reduce large parts fork lift travel into pre-pick to correct wrong parts	T	Aug 24-30
SQD	Reduce forklift travel between trains	T	Aug 24-30
SQD	Effective process supervision	I	
SQD	Reduced Associate frustration (Morale)	I	

6. Goal(s) & Potential Benefits

Tools suitable for this step:

- SMART method
- Graphs
- Matrix

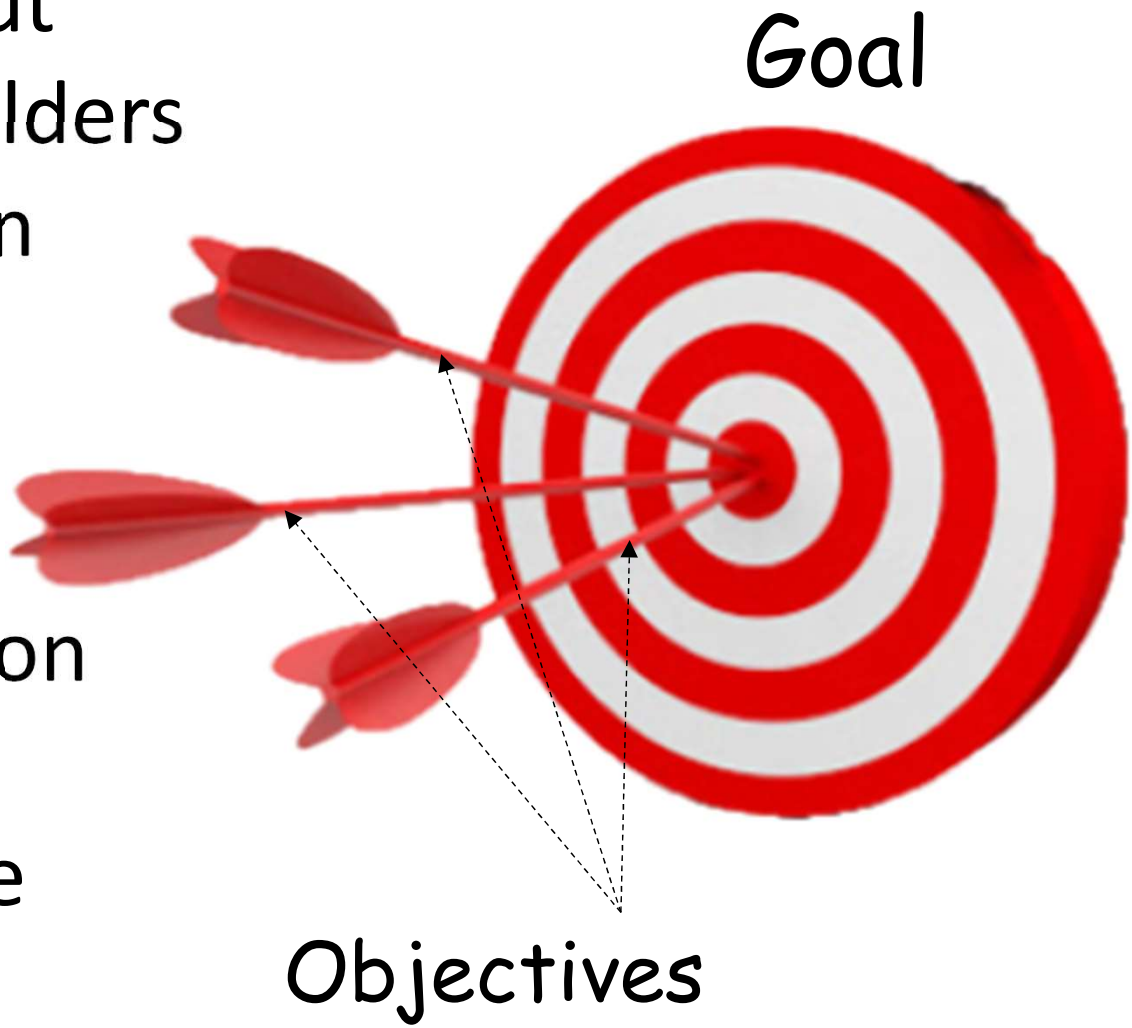


Data Process Flow	Time Spent On Process Annually (hrs)	Number Of Steps	Time Spent On Process Annually Goal (hrs)	Number Of Steps Goal
Vacation Request (Entry)	375	7	161	3
First Aid (Daily Incidents)	250	3	167	2
Attendance Discipline	60	10	30	5
Vacation Request (Inquiry)	52	5	21	2
Totals	737	25	378	12

7. Objective Development

What is involved?

The team collects input from affected stakeholders and develops selection objectives



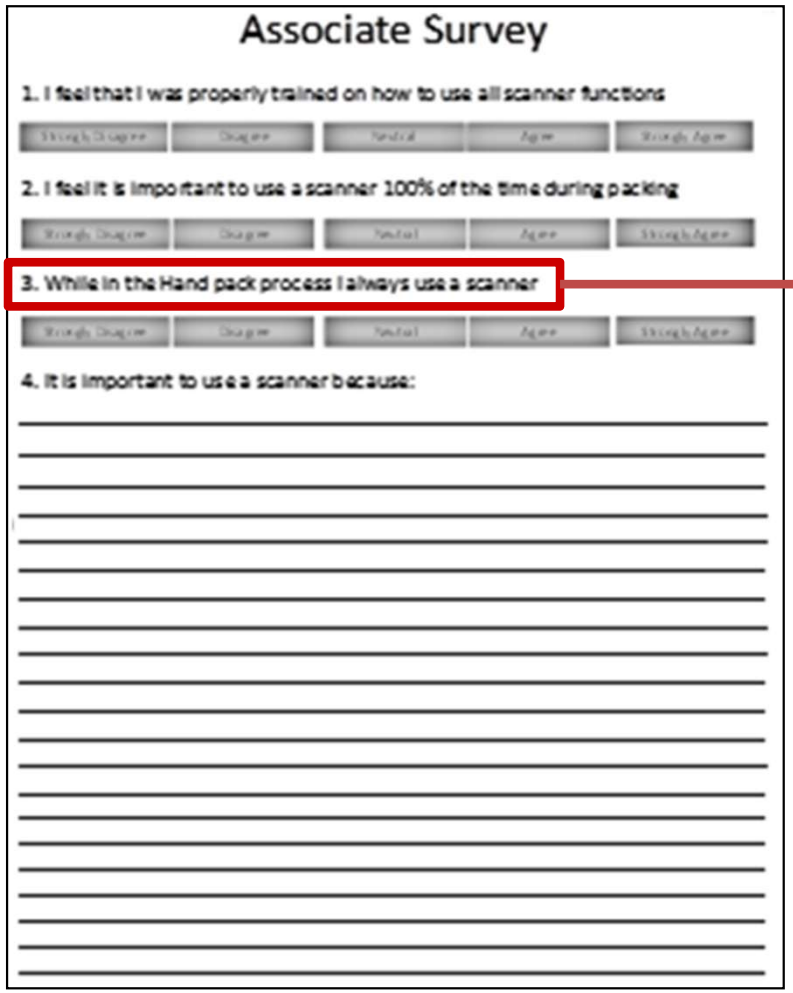
Why do this step?

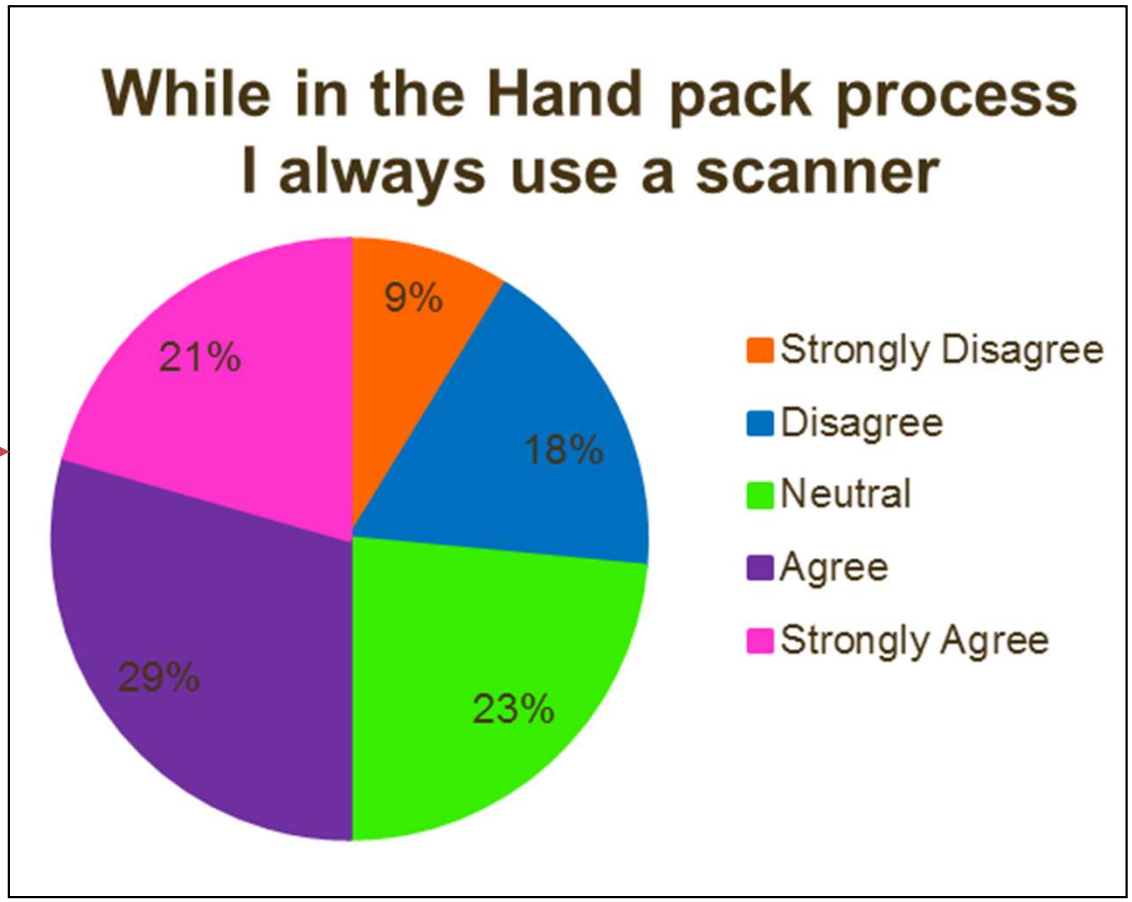
To validate the selection of the improvement alternative and ensure that the best idea is chosen

7. Objective Development

Gather and document input from the affected stakeholders to get ideas or concerns

- Use surveys (graph results), pictures etc





7. Objective Development

Develop and list objectives that will influence the improvement choice on a MMR chart

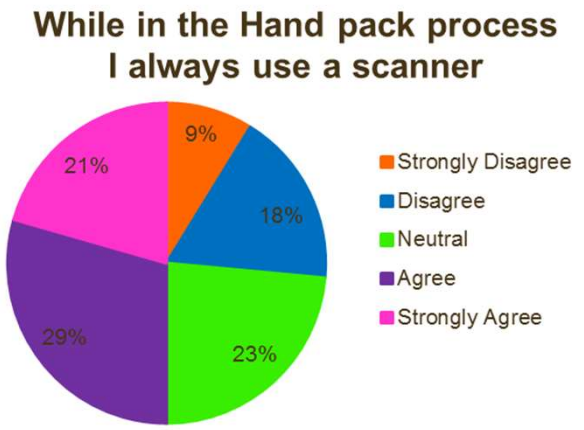
- Measurable (quantifiable)
- Mandatory (required to reach goal)
- Realistic (attainable)

MMR Chart					
Objectives	Must			Want	Rationale
	Measurable	Mandatory	Realistic		
Correct inventory discrepancies	✓	✓	✓		To ensure accurate inventory
Speed up inventory correction	✓	✓	✓		To help eliminate phantom serial numbers
Stay within cost/budget	✓	✓	✓		To meet our financial constraints
No manpower up	✓	✓	✓		To meet departmental budgetary constraints
Improve associate morale				✓	Eliminate associate frustration Happy associate = productive associate
Support business plan to improve performance and quality	✓	✓	✓		To make management happy

7. Objective Development

Tools suitable for this step:

- MMR Chart
- Surveys
- Graphs



Objective	Must			Want
	Measureable	Mandatory	Realistic	
SQL or DB2 compliant	X	X	X	
Associate records to contain: name, birthday, address, SIN, hire date, health card #, employee #, department, emegency contacts	X	X	X	
Supplementary data: current pay rate, position, shift, progression steps, dependants, education	X	X	X	
"Other" info: vacation, attendance, training, certifications, discipline, performance management, recruiting, safety incidents	X	X	X	
Scan and attach (resumes, pictures, etc.)	X	X	X	
Health and safety (Form 7, WSIB)	X	X	X	
Safety equipment tracking (PPE, etc.)				X
Related MHE and licensing	X	X	X	
Ad hoc reporting	X	X	X	
Interface with payroll, AE, NAVision	X	X	X	
Confirm scability (max employees)	X	X	X	
Swipe access tracking and auditing				X
Security to control access to data at dept. and shift levels	X	X	X	
Electronic signoff/authorization of overtime	X	X	X	
Interface to swipe access system				X
Automated quarterly, annual attendance bonus and personal day payout calculations	X	X	X	
Organizational chart generation	X	X	X	
Export to flat file / PDF	X	X	X	
Job performance evaluations				X
Automated pay increase calculations with authorization	X	X	X	
"Mass update" of pay increases	X	X	X	
Asset tracking (cell phones, laptops, etc.)				X
Vacation day tracking - planned vs. actual	X	X	X	
Custom holiday entry	X	X	X	
Automated approval/denial of statutory holiday pay	X	X	X	
"Fuzzy logic" searching				X
Meets budget	X	X	X	
Must meet install deadline	X	X	X	
GUI Friendliness	X	X	X	
Maintenance / Support	X	X	X	

8. Develop Improvement Alternatives

What is involved?

The team brainstorms improvement alternatives

Why do this step?

To ensure that the team has several options for improving the situation

8. Develop Improvement Alternatives

Brainstorm several alternatives to improve the current situation

- Even though the team already may have an idea on how to improve the current situation, other alternatives are needed
- Show and explain the process on how the team came about the alternatives using the data and feedback from previous steps

Step 8: Develop Improvement Alternatives

To develop our improvement alternatives, we spoke with the associates performing the process, and combined their ideas with a brainstorming session to come up with a list of 9 possible alternatives to improve safety and efficiency. These alternatives included many ideas such as correcting Wi-Fi problems, better monitoring of the processes, layout changes, or increased accountability for sequencing of parts. Our sponsor asked us to be aware of causing new safety concerns, the importance of getting buy in from the process associates and finally our budget and time constraints.

IMPORTANT! Remember that any improvement alternatives must address the root causes confirmed in Step 5

8. Develop Improvement Alternatives

Tools suitable for this step:

- Brainstorming
- Surveys
- Pictures

4 What tools do you think would help you build cart trains more accurately?

9. Decision Analysis

What is involved?

The team weighs the pros and cons of each improvement alternative

Why do this step?

To ensure the team picks the best improvement alternative

9. Decision Analysis

Use a decision analysis (DA) matrix to weigh alternatives against your MUST and WANT objectives

		Current or Future Situation	Option #1		Option #2		Option #3	
		Select HRIS system that meets musts and as many wants as possible	AXENTIA		HR Technologies		ORACLE	
OBJECTIVES	MUSTS	meet budget		Go or NG		Go or NG	significantly over	Go or NG
		DB or SQL compliant		Go or NG		Go or NG		Go or NG
		scalibility	extra$ over 300 people	Go or NG		Go or NG		Go or NG
		ad hoc reporting		Go or NG		Go or NG		Go or NG
		interface with payroll	extra$	Go or NG	extra$	Go or NG	extra$	Go or NG
		controls access to data		Go or NG		Go or NG		Go or NG
		track associate data		Go or NG		Go or NG		Go or NG
				☑		☑		☑
	WANTS	track assets		Y		Y		Y
		interface with swipe access system		N		Y		Y
		"fuzzy logic" searching		N		N		Y
		Judgement:		**N**		**Y**		**N**

9. Decision Analysis

Use any other methods possible to also weigh each alternative against each other

- Document accordingly

9 Improvement Idea Development & Prioritization

		Option #1	Option #2	Option #3	Option #4	Option #5
Objectives	Must	New tools for efficiency	NG	Go	GO	GO	GO
		Simplified Process	NG	NG	GO	GO	GO
		Improved systems data	GO	GO	GO	GO	GO
		Correct inventory discrepancies	GO	GO	GO	GO	GO
		Speed up inventory correction	NG	NG	GO	GO	GO
		Is cost effective	GO	GO	GO	GO	NG
			3	3	5	5	4

MMR – Measurable, Mandatory, Realistic

Options #3 and #4 both meet all the "MUST" objectives on the DA matrix

Options #3 and #4 score identical when weighed against SQCDME

Option #3 comes out ahead when both are weighed against potential failure modes

9 Improvement Idea Development & Prioritization

	Option #1	Option #2	Option #3	Option #4	Option #5
	Track CSN by paper and enter manually	Scan with report and enter manually	Scan to a holding list and automated update	Scan with a go/no go verification scan based on an autonomous master packing list dump, and automated update	Scan with a verification scan based off of an autonomous mirror AS400 and automatic update AS 400 when system goes back up
Safety	2	4	5	5	5
Enviromental	1	2	5	5	5
Quality	1	2	4	5	5
Cost	5	4	4	3	1
Delivery	2	2	3	4	5
Mgmt of process	1	2	5	4	3
SCORE	12	16	26	26	24
RANK	5	4	1	1	3
JUDGMENT					

CSN – Container Serial Number PCS – Packing Check Sheet

9 Improvement Idea Development & Prioritization

Scan system Failure mode	Option #3	Option #4
	Scan to a holding list and automated update	Scan with a go/no go verification scan based on an autonomous master packing list dump, and automated update
AS 400 down	Yes	Yes
Lose of connectivity with AS 400	Yes	Yes
HCM wifi down	Yes	No
No power in the CC	Yes	No
SCORE	4	2
RANK	1	2
JUDGMENT		

9. Decision Analysis

Choose an improvement alternative for implementation

- List any possible risks/consequences
- Prepare countermeasures for potential risks

		Current or Future Situation	Option #1		Option #2		Option #3	
		Select HRIS system that meets musts and as many wants as possible	AXENTIA		HR Technologies		ORACLE	
OBJECTIVES	MUSTS	meet budget		Go or NG		Go or NG	significantly over	Go or NG
		DB or SQL compliant		Go or NG		Go or NG		Go or NG
		scalibility	extra$ over 300 people	Go or NG		Go or NG		Go or NG
		ad hoc reporting		Go or NG		Go or NG		Go or NG
		interface with payroll	extra$	Go or NG	extra$	Go or NG	extra$	Go or NG
		controls access to data		Go or NG		Go or NG		Go or NG
		track associate data		Go or NG		Go or NG		Go or NG
				☑		☑		☑
	WANTS	track assets		Y		Y		Y
		interface with swipe access system		N		Y		Y
		"fuzzy logic" searching		N		N		Y
		Judgement:		**N**		**Y**		**N**

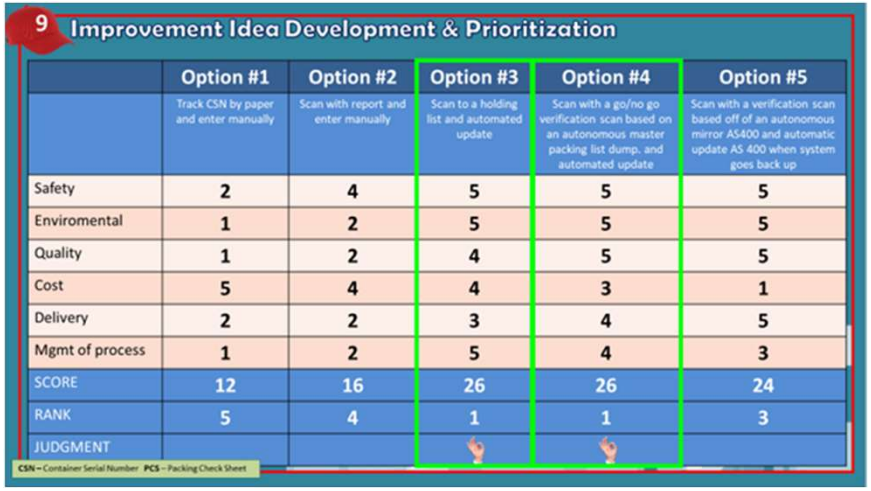
DECISION STATEMENT:	**Select HRIS system that meets musts and as many wants as possible**
BEST OPTION:	**HR Technologies**
RISKS	**ADVERSE CONSEQUENCES**
Hidden costs	approach senior management for more money

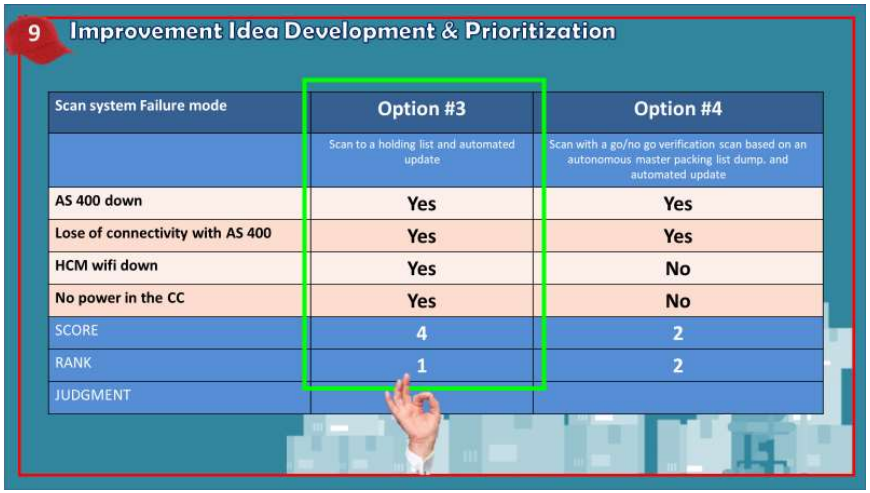
9. Decision Analysis

Tools suitable for this step:

- Decision Analysis (DA) matrix
- Any other tool that can be used to weigh the alternatives against each other

	Select the best method(s) to improve safety & efficiency in the large parts packing area	Alternative 1 Correct Tablet Wi-Fi issues	Alternative 2 Increase visibility of 'pre-pick scanning'	Alternative 3 Better monitoring for pre-pick missing parts (KPI)	Alternative 4 Install display for pre-pick missing parts for Receiving S/L	Alternative 5 Layout adjustment for Pre-pick stage	Alternative 6 Improve sequencing of large parts stock locations	Alternative 7 Dedicated manpower for large parts sequencing	Alternative 8 Increased accountability for stock location sequencing	Alternative 9 Dedicated lanes for train build
MUST	Support company efforts to improve safety	Go	Go	Go	Go	Go	Go	Go	Go	Go
	No additional manpower required	Go	Go	Go	Go	Go	Go	Go	Go	Go
	Implemented within budget	Go	Go	Go	Go	Go	Go	Go	Go	Go
	Reduce wrong/not picked parts in Large Packing	Go	Go	Go	Go	Go	Go	Go	Go	Go
	Reduce mixed trains	Go	Go	Go	Go	Go	Go	Go	Go	Go
	Improve visibility of Pre-pick scanning	Go	Go	Go	Go	Go	Go	Go	Go	Go
WANT	Improve associate morale	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Improve bin orientation (arrows & openings)	N	N	N	N	N	N	N	N	N





ATTENTION NEEDED!!!!!

Steps 10 through 13 of the project format are known as the Deming Circle aka PLAN, DO, CHECK, ACT

10. Planning Implementation of Best Alternative (PLAN)

What is involved?

The team develops a detailed plan for the implementation of the improvement

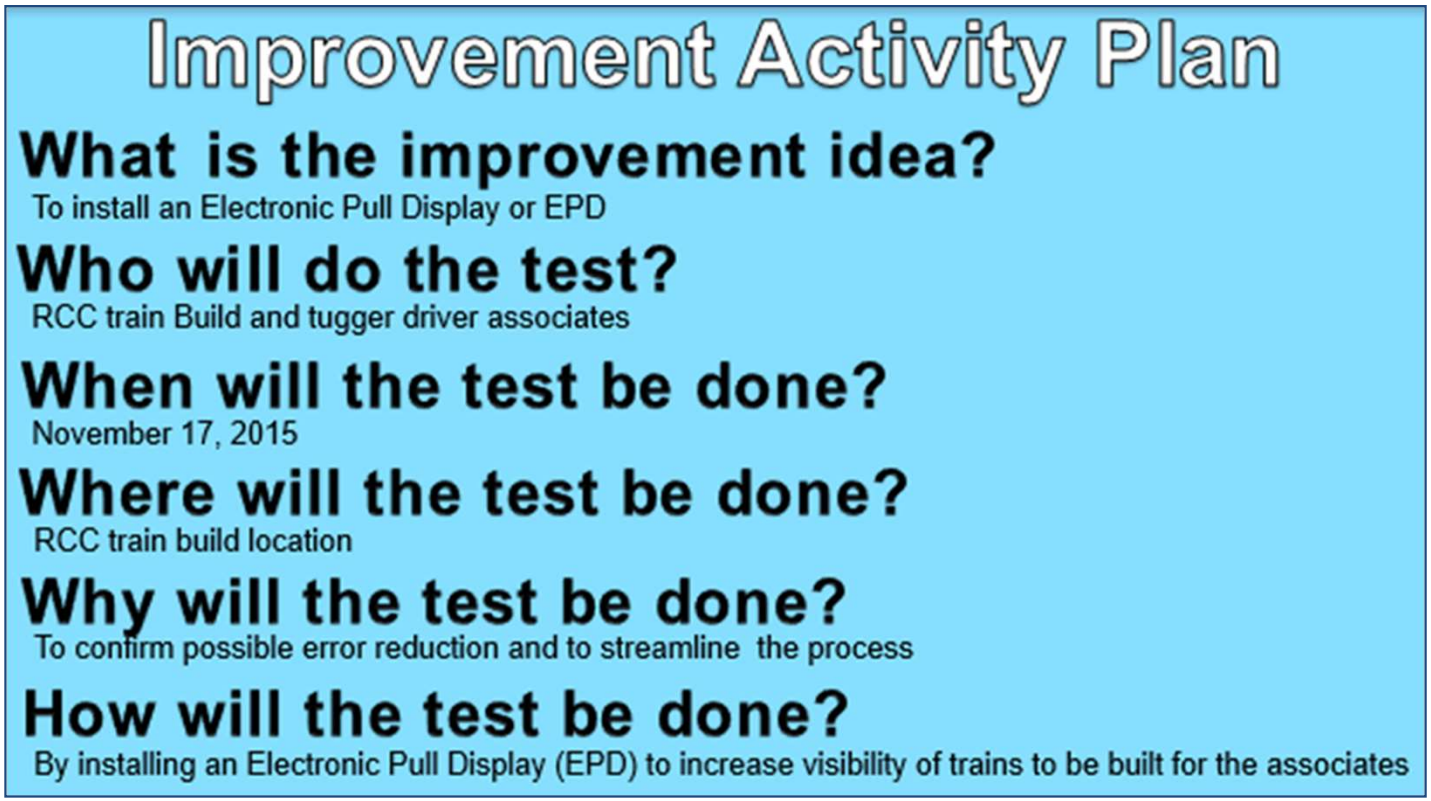
Why do this step?

To ensure that all aspects of the implementation are considered and laid out in such a way that the implementation should run smoothly with the end result meeting the project objectives

10. Planning Implementation of Best Alternative (PLAN)

Prepare a detailed implementation plan and identify any required tests or trials

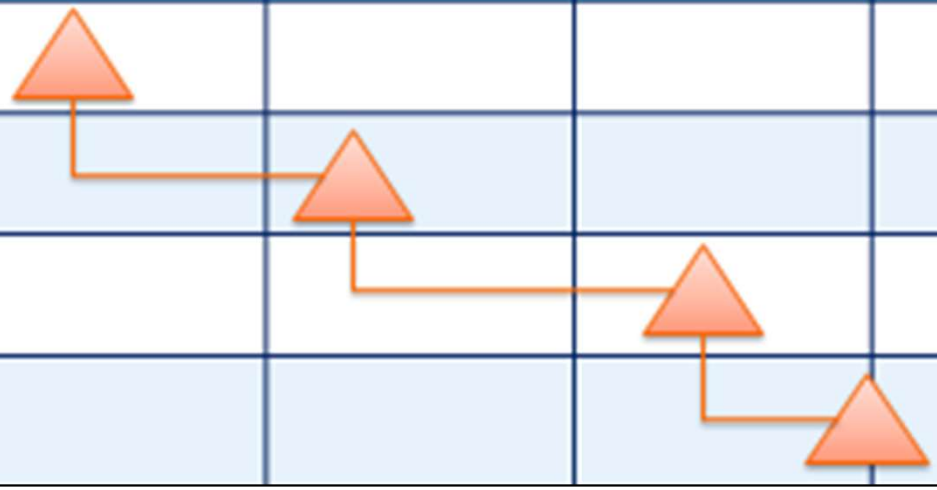
The team develops a detailed plan for the implementation of the improvement



10. Planning Implementation of Best Alternative (PLAN)

Develop a Gantt chart to chart the implementation progress

Name	Task	Time			
		September	October	November	December
Team	Develop idea/get approval				
Team /ISD	Purchase equipment needed				
Maintenance/ISD	Install TV's computers… /programing				
Team/ISD	Test				



10. Planning Implementation of Best Alternative (PLAN)

Identify any potential problems in the plan and develop action plans for dealing with them if they should arise

Potential Failure Mode and Effect Analysis

Honda Part Number: 00X3B & 00X3A- S9V S3V-xxxx
Honda Part Number: 00X3B & 00X3A-S9V/S3V-xxxx

Process Responsibility: Production Area PC

Prepared by: SPS2 OMK Assy Team

Model Year; 05 Model Pilot & MDX

Beneficial or Key Date: Sept 24, 2004 (Mass Pro)

PFMEA Date (Original) DEC 4, 2003 Rev. 02 Sept 24,2004

Core Process Team: QC/PC/ Staging

Occurrence data is assumptive

	Process	Potential Failure Mode	Potential Effects of Failure	Occurrence	Severity	Detection	Risk Number	Priority	Current Controls	Recommended Actions	Responsibility and Target Date
Receiving	1	Wrong Qty	Inventory and Financial Cycle Implications	4	8	2	64	B	Issue Supplier Deviation document to buyer	As per customer supplied document	Mgr December 18,2003
		Damaged Parts	Inventory and Financial Cycle Implications	4	8	2	64	B	Issue Supplier Deviation document to buyer	As per customer supplied document	Mgr December 18,2003
		No Paperwork (MPL)	Inventory and Financial Cycle Implications	4	8	2	64	B	Issue Supplier Deviation document to buyer	As per customer supplied document	Mgr December 18,2003
Delivery	2	Incorrect Vanning Layout / Pull Order /Timing	Past Install Off-line to Repair Downtime	3	8	1	24	C	Operations Staging, Staging	Operations Standards	Mgr December 18,2003
Loading	3	Incorrect Vanning Layout / Pull Order /Timing	Past Install Off-line to Repair Downtime	3	8	1	24	C	Operations Staging, Staging	Operations Standards	Mgr December 18,2003
Scanning	4	Scanner Override	Past Install Off-line to Repair Downtime	6	8	1	48	B	No Override.	Section Leader Sign-off Variances	Mgr December 18,2003
Staging	5	Incorrect Vanning Layout / Pull Order /Timing	Internal Process Time Inefficiency (Tact Time impact)	1	8	1	8	C	Operations Staging.	Operations Standards	Mgr December 18,2003
Picking	6	Mis-Pack from finished goods	Internal Process Time Inefficiency (Tact Time impact)	6	8	1	48	B	Mis-pack and mis-pick parts Tracking. Section Leader sign off	Section Leader check at Staging	Mgr December 18,2003
Pre-Pick	7	Parts Mispicked	Impact to packing tact time.	4	8	2	64		12 points check by prepicker	Clean up parts signage on the racks.	6/25/04 Completed.
		Mis-count from child parts inventory	Internal Process Time Inefficiency (Tact Time impact)	4	8	2	64	B	1 in 30 check and sign -off	1 in 15 at non-conformance	Mgr December 18,2003
FLDS	7A	FLDS not showing key characteristics	Packer failed to identify prepicker's mispick.	3	8	2	48		Reviewed FLDS on key characteristics	Audit & check FLDS on the parts packer failed to catch prepicker's mistake.	SV monthly
Packing	7B	Failed to check prepicked parts against FLDS.	Impact to Final checking process time	4	8	2	64		Check against FLDS	Audit & check FLDS on the parts packer failed to catch prepicker's mistake.	
		Small Lot requirements not packed right	Past Install Off-line to Repair	6	8	1	48	B	Operation Standard for Small Lot Control	1 in 15 at non-conformance	Mgr December 18,2003
		Packing to wrong Design Level	Past Install Off-line to Repair	6	8	1	48	B	Confirmation of MPL to Design Control Log	As Per Parts Containment Process Guide	Mgr December 18,2003
Final checking	7C	Failed to catch wrong parts packed.	Misshipment to HCM	3	9	6	162		Check against FLDS and sign on FLDS		
Stocking	8	Stock Out	Past Install Off-line to Repair Downtime	2	8	2	32	B	Line Speed Cycle time check at 120 minutes for 200 Units	15 pieces per (Shift pack Target)	Mgr December 18,2003
Transfer	9	Damage in Internal Transit	Internal Process Time Inefficiency (Tact Time impact)	2	8	2	32	B	Quarantine and QC Guidelines as SPOS	Operations Standards	Mgr December 18,2003
Receiving	10	No Paperwork (MPL)	Inventory and Financial Cycle Implications	4	8	2	64	B	Manual Inventory Control into GPCS	Operations Standards	Mgr December 18,2003
		Missing Label	Unable to receive into Inventory	4	8	2	64	B	Confirm part requirements to MPL	Operation Standard	Mgr December 18,2003
Devanning	11	Dropped Skid and Parts Damaged	Parts Shortage / Expedite	4	8	2	64	B	Quarantine and QC Guidelines as SPOS. Return to Supplier (Supplier by Supplier condition ie. Sinclair - no fault return via FEDEX)	Operations Standards	Mgr December 18,2003
Supplier Concern	12	Supplier notifies SPS2 Production Control / QC S/L of containment requirements	Non-Conforming Parts Shipped	2	8	2	32	B	Quarantine and QC Guidelines as SPOS. Lock Down and 100% parts check in finished goods and inventory	Operations Standards	Mgr December 18,2003

Occurrence		
Rank	Rate	Probability of Failure
10	> 1 in 2	Very High
9		
8	1 in 8	High
7	1 in 20	
6	1 in 80	Moderate
5	1 in 400	
4	1 in 2000	
3	1 in 15, 000	Low
2	1 in 150, 000	Very Low
1	1 in 1.5 m	Remote

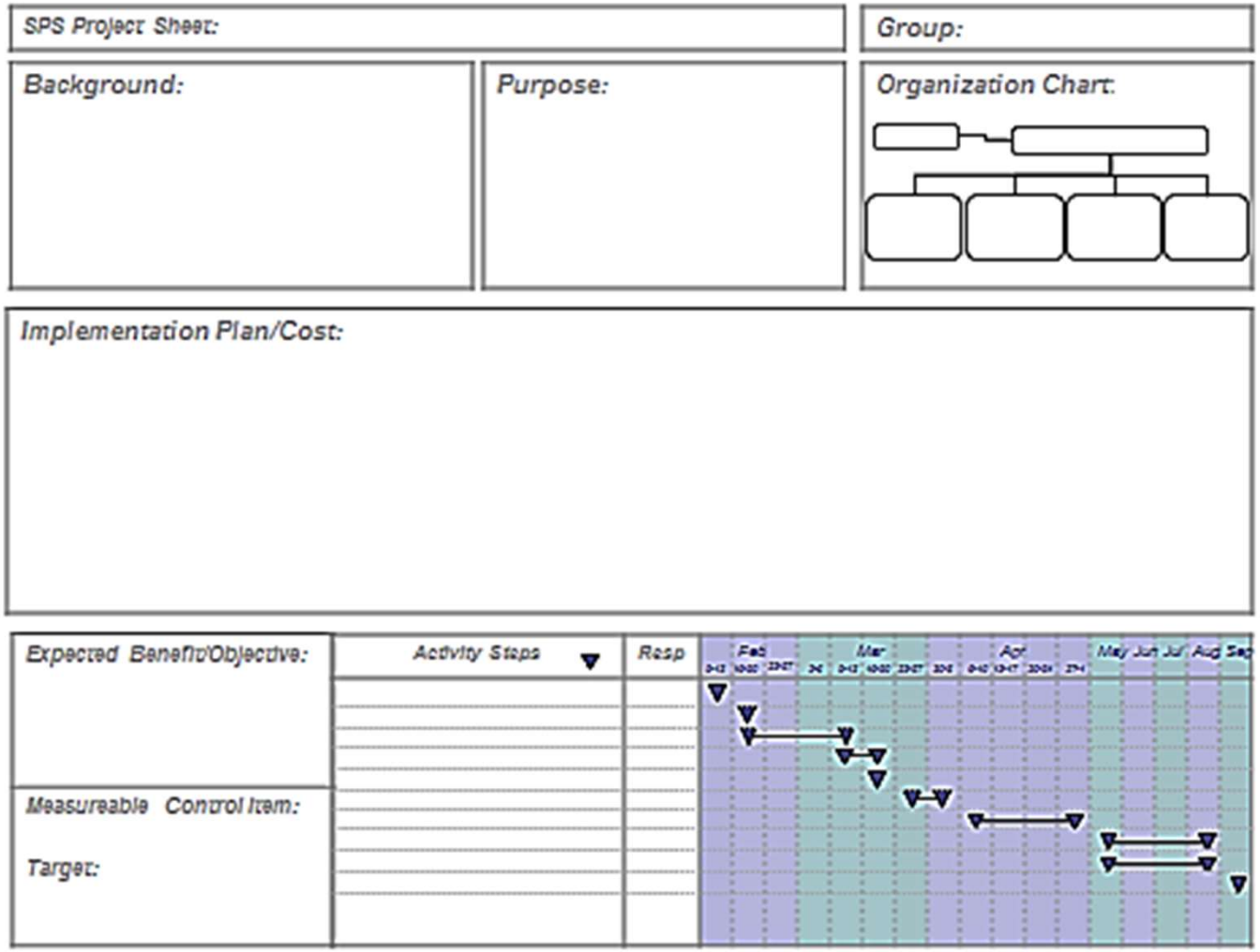
Priority	
Rank	Risk Number
S	436-1000
A	130-435
B	27-129
C	0-26

Severity	
Rank	
10	Hazard - no warning
9	Hazard - with warning
8	Very High
7	High
6	Moderate
5	Low
4	Very Low
3	Minor
2	Very Minor
1	None

Detection	
Rank	
10	Almost Impossible
9	Very Remote
8	Remote
7	Very Low
6	Low
5	Moderate
4	Moderately High
3	High
2	Very High
1	Almost Certain

10. Planning Implementation of Best Alternative (PLAN)

Prepare a one page summary of you plan to submit to management for approval



10. Planning Implementation of Best Alternative (PLAN)

Tools suitable for this step:

- 5Ws-1H
- Gantt Chart
- PFMEA
- Task Tree

Name	Task	Time			
		September	October	November	December
Team	Develop idea/get approval				
Team /ISD	Purchase equipment needed				
Maintenance/ISD	Install TV's computers... /programing				
Team/ISD	Test				

	TASK	MATERIAL COST	Man / Hours
Tablet Wi-Fi Connection	Meet with ISD Tech	$ 0	1
	Arrange Trials	$ 0	32
	Get management approval	$ 0	1
	Order equipment	$ 500	1
	Deploy new equipment	$ 0	8

Improvement Activity Plan

What is the improvement idea?
To install an Electronic Pull Display or EPD

Who will do the test?
RCC train Build and tugger driver associates

When will the test be done?
November 17, 2015

Where will the test be done?
RCC train build location

Why will the test be done?
To confirm possible error reduction and to streamline the process

How will the test be done?
By installing an Electronic Pull Display (EPD) to increase visibility of trains to be built for the associates

Potential Failure Mode and Effect Analysis

Honda Part Number: 00X3B & 00X3A- S9V/S3V-xxxx
Honda Part Number: 00X3B & 00X3A- S9V/S3V-xxxx

Process Responsibility: Production Area PC

Prepared by: SPS2 OMK Assy Team

Model Year: 05 Model Pilot & MDX

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Delivery	2	Incorrect Vanning Layout / Pull Order / Timing	Paint Install Offline to Repair Downtime	3	8	1	24	C	Operations Staging, Staging	Operations Standards	Mgr December 18,2003
Loading	3	Incorrect Vanning Layout / Pull Order / Timing	Paint Install Offline to Repair Downtime	3	8	1	24	C	Operations Staging, Staging	Operations Standards	Mgr December 18,2003
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Staging	5	Incorrect Vanning Layout / Pull Order / Timing	Internal Process Time Inefficiency (Tact Time impact)	1	8	1	8	C	Operations Staging	Operations Standards	Mgr December 18,2003
Picking	6	Mis-Pack from finished goods	Internal Process Time Inefficiency (Tact Time impact)	6	8	1	48	B	Mis-pack and mis-pick parts Tracking, Section Leader sign off	Section Leader check at Staging	Mgr December 18,2003
Pre-Pick	7	Parts Misplaced	Impact to packing tact time.	4	8	2	64		12 points check by preplcker	Clean up parts signage on the racks.	6/25/04 Completed.
		Mis-count from child parts inventory	Internal Process Time Inefficiency (Tact Time impact)	4	8	2	64	B	1 in 30 check and sign -off	1 in 15 at non-conformance	Mgr December 18,2003
FLDS	7b	FLDS not showing key characteristics	Packer failed to identify preplcker's mispick.	3	8	2	48		Reviewed FLDS on key characteristics	Audit & check FLDS on the parts packer failed to catch preplcker's mistake.	SV monthly
Packing	7B	Failed to check preplcked parts against FLDS.	Impact to Final checking process time.	4	8	2	64		Check against FLDS	Audit & check FLDS on the parts packer failed to catch preplcker's mistake.	
		Small Lot requirements not packed right	Paint Install Offline to Repair	6	8	1	48	B	Operation Standard for Small Lot Control	1 in 15 at non-conformance	Mgr December 18,2003
		Packing to wrong Design Level	Paint Install Offline to Repair	6	8	1	48	B	Confirmation of MPL to Design Control Log	As Per Parts Containment Process Guide	Mgr December 18,2003
Final checking	7C	Failed to catch wrong parts packed.	Misshipment to HCM	3	9	6	162		Check against FLDS and sign on FLDS		
Stocking	8	Stock Out	Paint Install Offline to Repair Downtime	2	8	2	32	B	Line Speed Cycle time check at 120 minutes for 200 Units	15 pieces per (Shift pack Target)	Mgr December 18,2003
Transfer	9	Damage in Internal Transit	Internal Process Time Inefficiency (Tact Time impact)	2	8	2	32	B	Quarantine and QC Guidelines as SPOS	Operations Standards	Mgr December 18,2003
Receiving	10	No Paperwork (MPL)	Inventory and Financial Cycle Implications	4	8	2	64	B	Manual Inventory Control into GPCS	Operations Standards	Mgr December 18,2003
		Missing Label	Unable to receive into Inventory	4	8	2	64	B	Confirm part requirements to MPL	Operation Standard	Mgr December 18,2003
Devanning	11	Dropped Skid and Parts Damaged	Parts Shortage / Expedite	4	8	2	64	B	Quarantine and QC Guidelines as SPOS. Return to Supplier (Supplier by Supplier condition ie. Sinclair - no fault return via REDEX)	Operations Standards	Mgr December 18,2003
Supplier Concern	12	Supplier notifies SPS2 Production Control/ QC S/L of containment requirements	Non-Conforming Parts Shipped	2	8	2	32	B	Quarantine and QC Guidelines as SPOS. Lock Down and 100% parts check in finished goods and inventory.	Operations Standards	Mgr December 18,2003

11. Testing/Implementation (DO)

What is involved?

The team carries out the implementation according to plan

Why do this step?

To document and monitor the implementation

11. Testing/Implementation (DO)

Carry out the implementation plan:

Have an RU READY meeting with all involved in the implementation

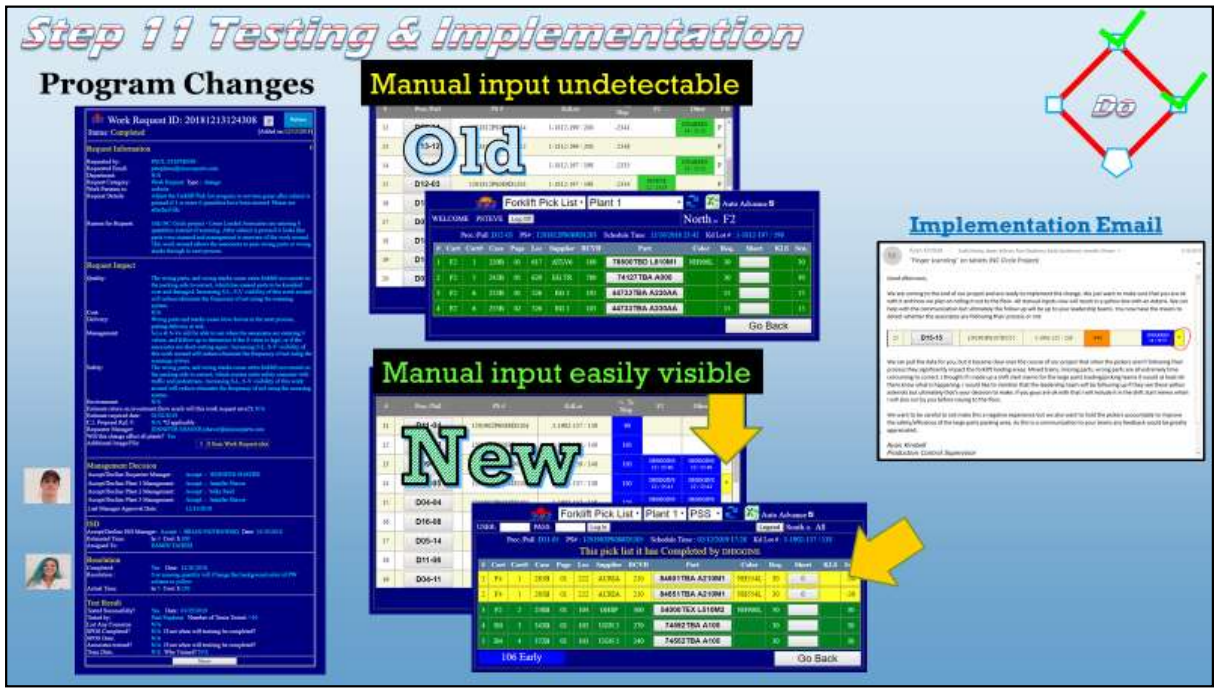
- Confirm responsibilities
- Review plan
- Review documentation procedures
- Review associate feedback method and target audience

The team carries out the implementation according to plan

11. Testing/Implementation (DO)

Document all aspects of the implementation

- Retain all documents relevant to the implementation
- Trial SPOS
- Pictures
- Surveys
- Communications



12. Implementation Verification (CHECK)

What is involved?

The team checks the improvement results against the objectives

Why do this step?

To determine if the improvement was successful and confirm that all tasks are completed

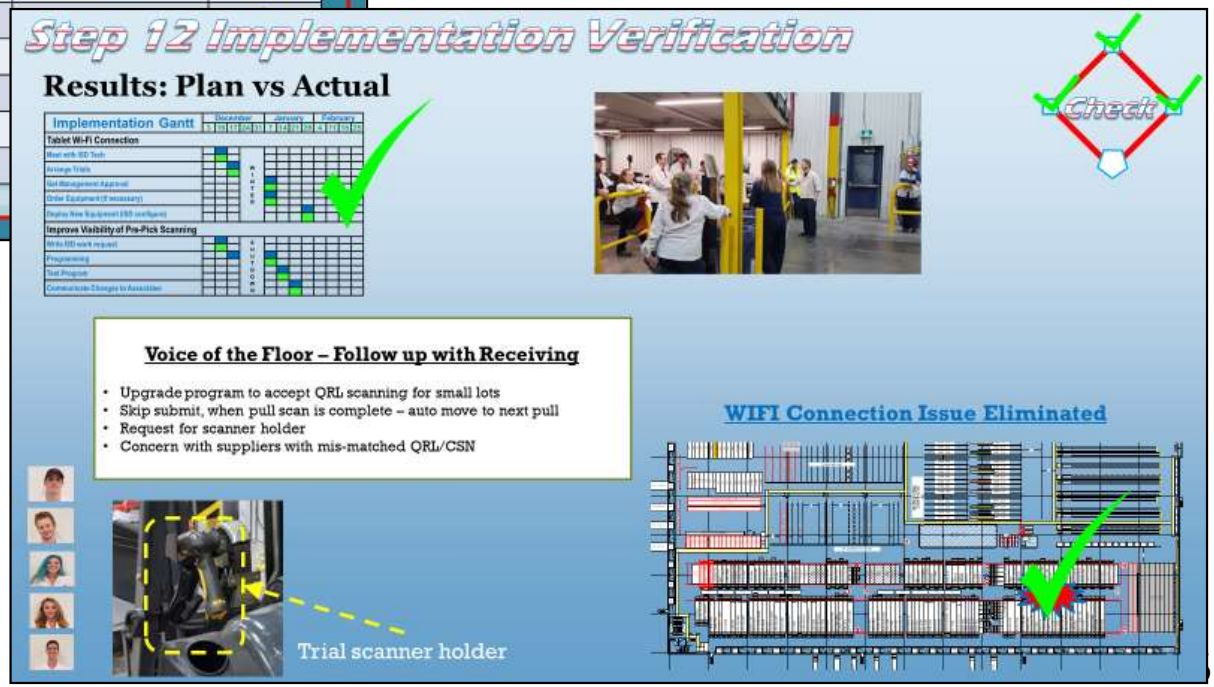
12. Implementation Verification (CHECK)

Confirm that all tasks during the testing/implementation were completed

12 Check

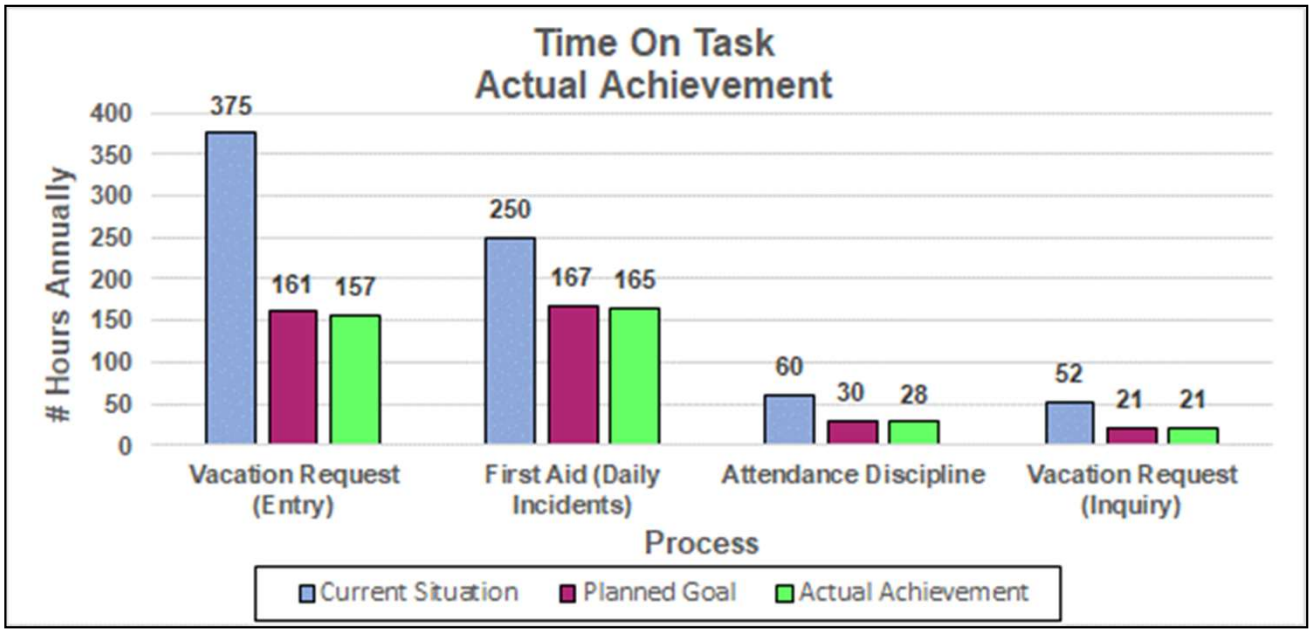
Implementation – Plan to Actual

Item	Who	Task	Plan	Actual	Judge
1	Wade H.	Create work request, submit to ISD	Oct 1 2018	September 28th	
2	Wade H.	Discuss work request with ISD	Oct 9 2018	October 4th	
3	Wade H.	Create purchase order request and get approval	Oct 31 2018	Oct 31st	
4	Brian P.	Submit request to ISD for equipment purchase	Nov 13 2018	November 2nd	
5	ISD	Receive and configure equipment	Nov 20 2018	November 16th	
6	ISD	Develop System per specifications	Dec 1 2018	Dec 1st	
7	Group	Test and confirm	Dec/Jan 2019		
8	Wade H.	Process Guide and Op Stand.	Jan 15 2019		
9	Group	Training	Jan 16 2019		
10	Group	Deploy	Jan 18 2019		
11	Group	Reflections	Feb 1 2019		



12. Implementation Verification (CHECK)

Compare the actual results against the primary objective



13. Implementation Standardization (ACT)

What is involved?

The team standardizes the improvement

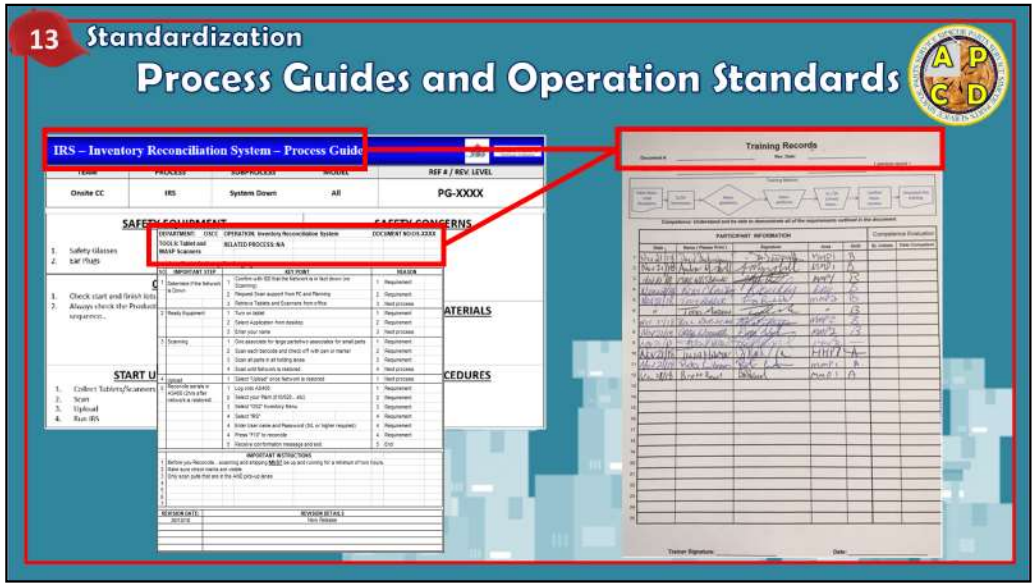
Why do this step?

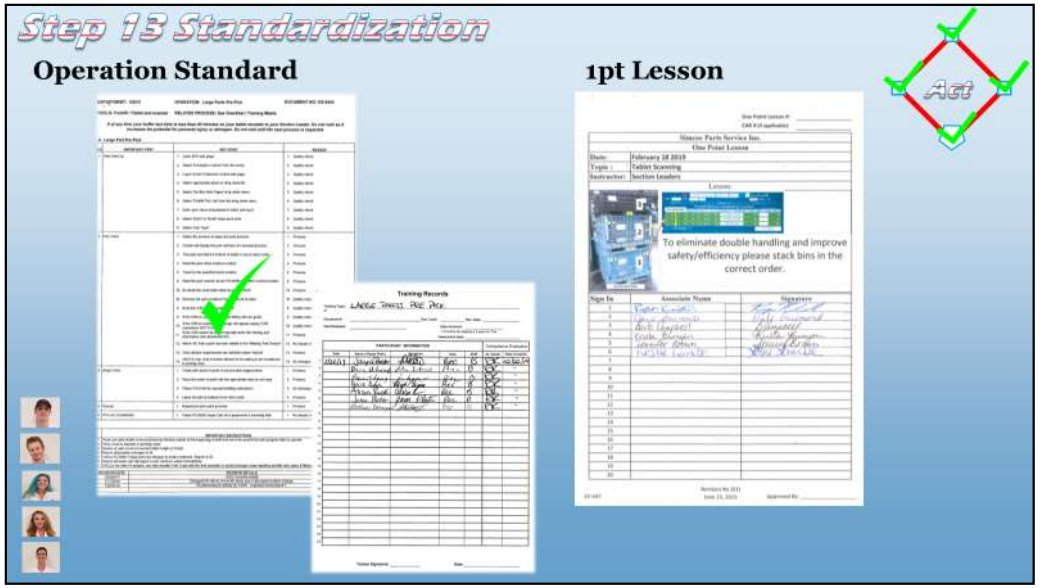
To ensure the improvement will remain in place and that all relevant documents reflect the change

13. Implementation Standardization (ACT)

Standardize the improvement throughout the organization

- Train associates as needed
- Update relevant documents (SPOS, process guides, EMGs etc)
- Communicate standardization to all stakeholders





14. Comparison Summary

What is involved?

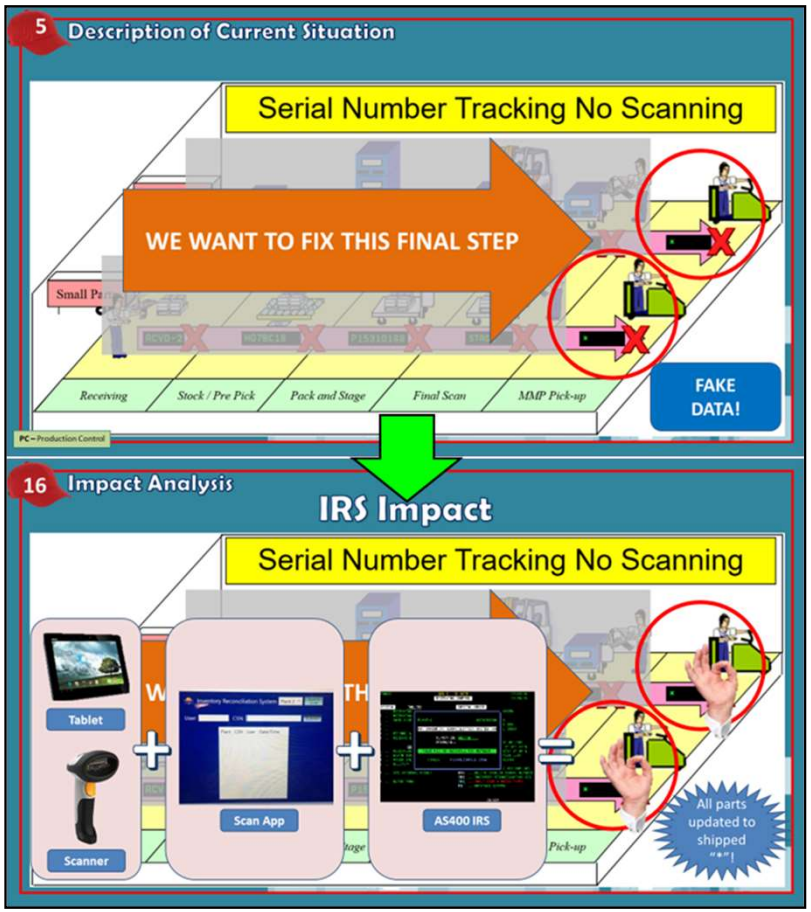
The team summarizes their project and reflects on the activity

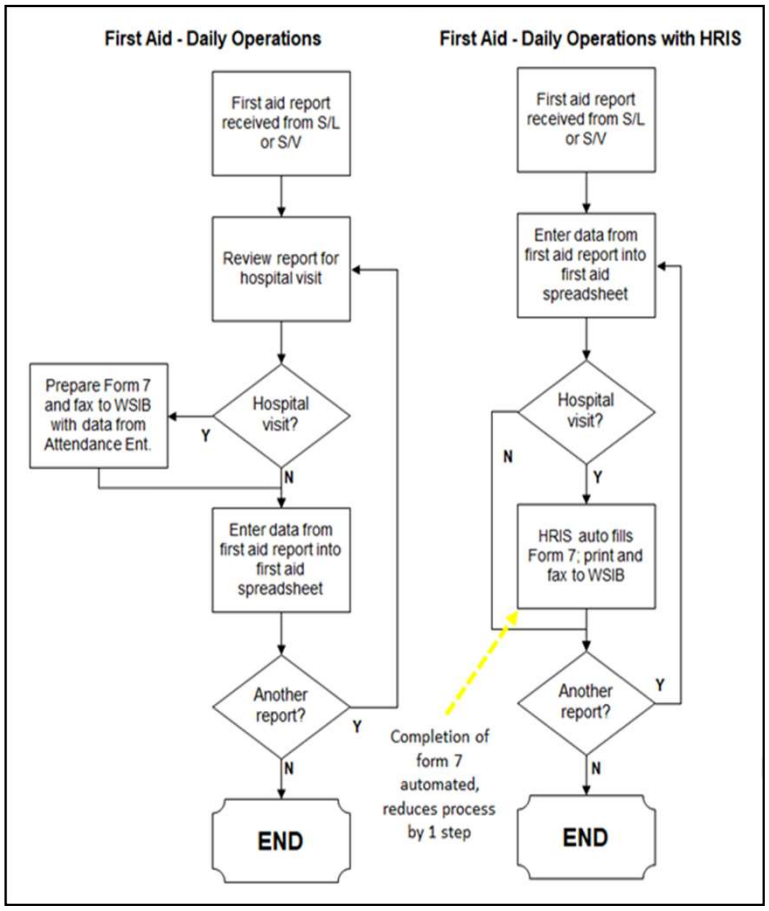
Why do this step?

To identify the impact that the project has had on the business plan and the team members

14. Comparison Summary

Use the same photos/drawings, layout, flow chart, etc. from Step 5 to compare the after implementation state

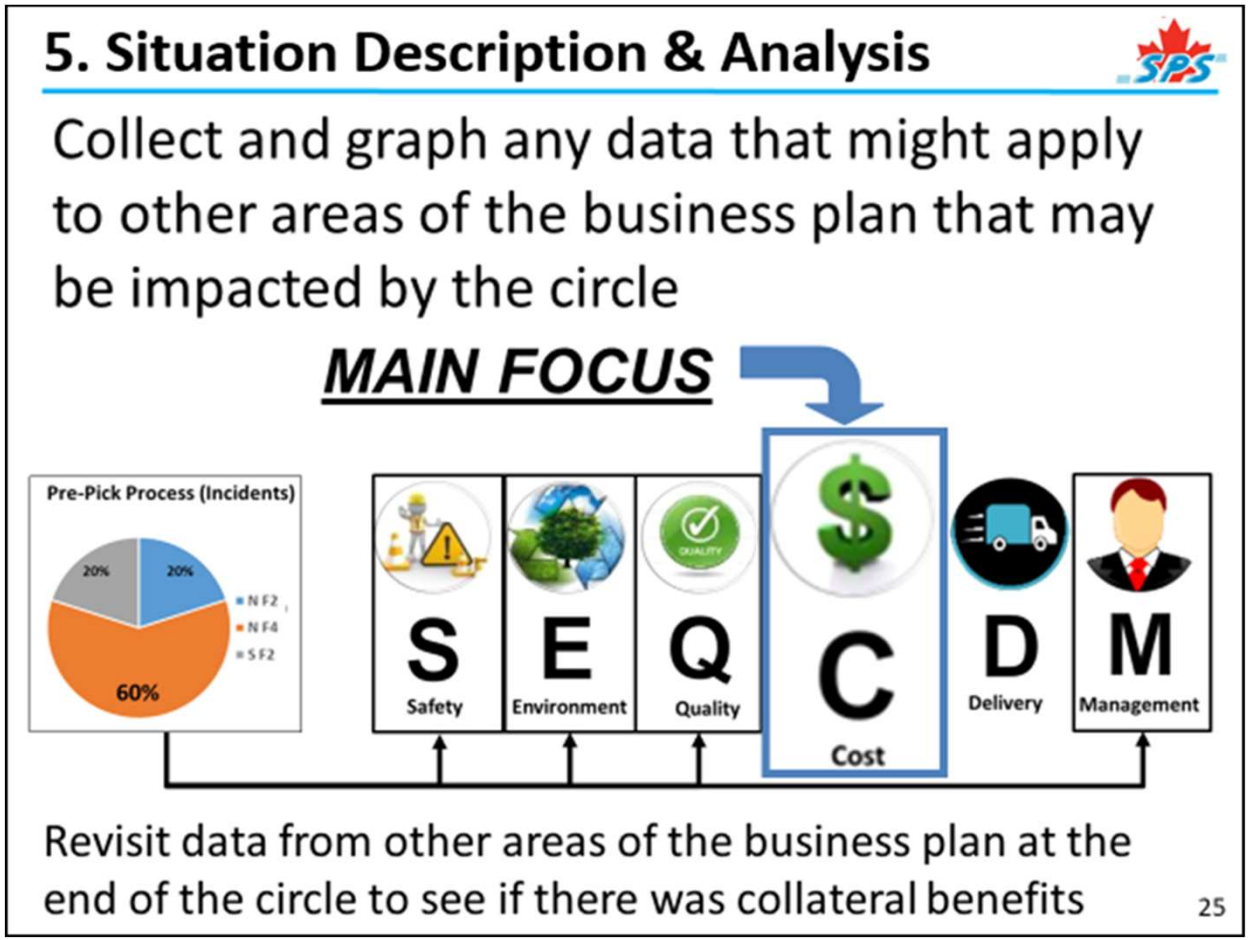




14. Comparison Summary

Use the appropriate tools to show the circle's impact on any additional business plan items identified in Step 5

EXAMPLE:
Compare post-improvement data for Safety, Environment, Quality & Management to determine any additional benefits

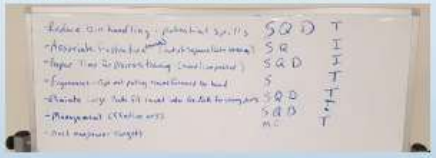


14. Comparison Summary

Assess tangible, intangible and unexpected benefits identified in Step 6

Step 6: Goals & Potential Benefits

Identify Potential Benefits



Category	Benefit	Tangible or Intangible	Collection Period
SQC	Reduced bin handling - potential spills	T	Aug 24-30
SQD	Proper time for process training	I	
SQD	Proper process and habit training	I	
SQD	Reduce large parts fork lift travel into pre-pick to correct wrong parts	T	
SQD	Reduce forklift travel between trains	T	
SQD	Effective process supervision	I	
SQD	Reduced Associate frustration (Morale)	I	

Step 14 Comparison Summary

Impact to Potential Benefits

4 mins/shift

1 min/shift

86% reduction

Category	Benefit	Tangible or Intangible
SQC	Reduced bin handling - potential spills	T
SQD	Proper time for process training	I
SQD	Proper process and habit training	I
SQD	Reduce large parts fork lift travel into pre-pick to correct wrong parts	T
SQD	Reduce forklift travel between trains	T
SQD	Effective process supervision	I
SQD	Reduced Associate frustration (Morale)	I

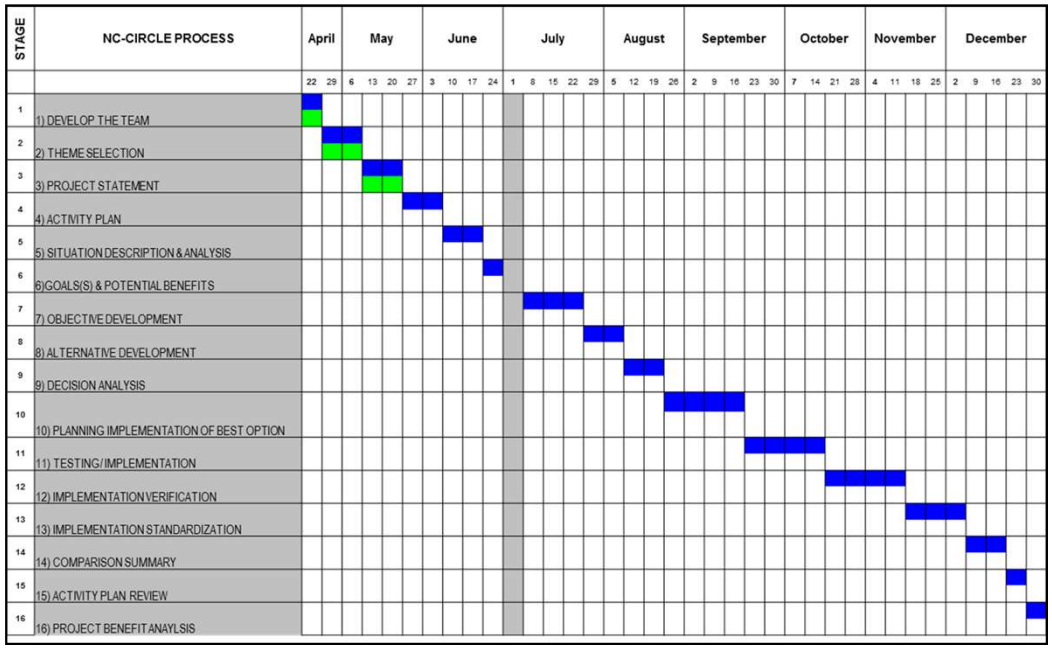
15. Activity Plan Vs Actual

What is involved?

The original activity plan is checked against the actual timing of the circle

Why do this step?

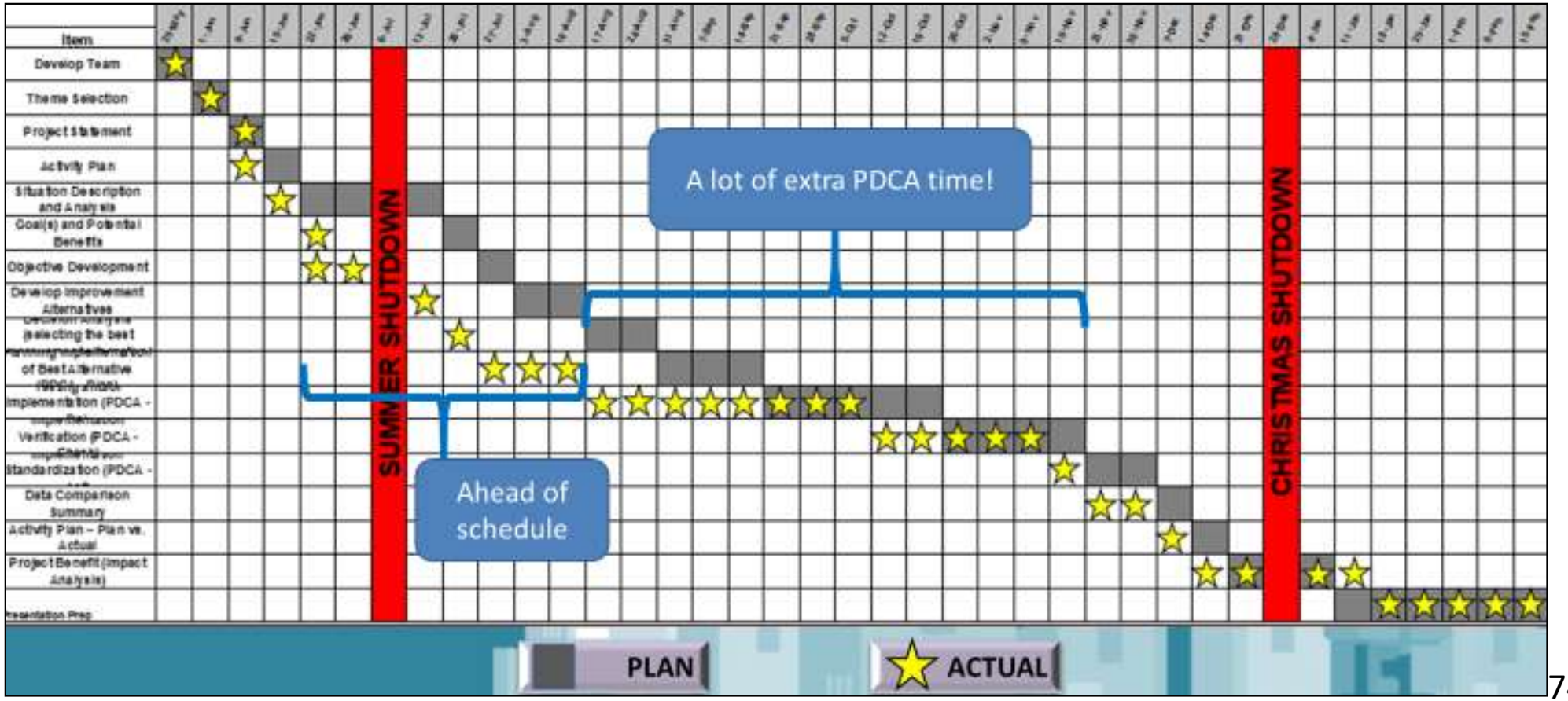
To comment and explain any deviation from the original plan



15. Activity Plan Vs Actual

As each step in the circle is completed it is plotted on the activity plan developed in Step 3

- Any significant deviations from the planned activity should be explained



16. Impact Analysis

What is involved?

Team members identify any new or improved skills and provide a cost assessment of the activity

Why do this step?

To show the impact of participating in the circle process on the individual associates and any return on investment

16. Impact Analysis

Identify, explain and display and new or improved skills developed during the circle

16 Impact Analysis – Personal Goals Achieved?

SPS Associate	Personal Goals	Achieved?
Wade Horan	Improve Team work skill and experience a leadership roll	Yes...begrudgingly
Angelique Kent	Learn process improvement methodology	Yep
Andy Wilson	Gain Continuous improvement experience for career advancement	Meteoric rise
Andrew MacAdam	To Win	With this project circle? Oh heck, yeah we will!
Keagan Shaver	To follow in Andy's footsteps	No yet...but soon ☺

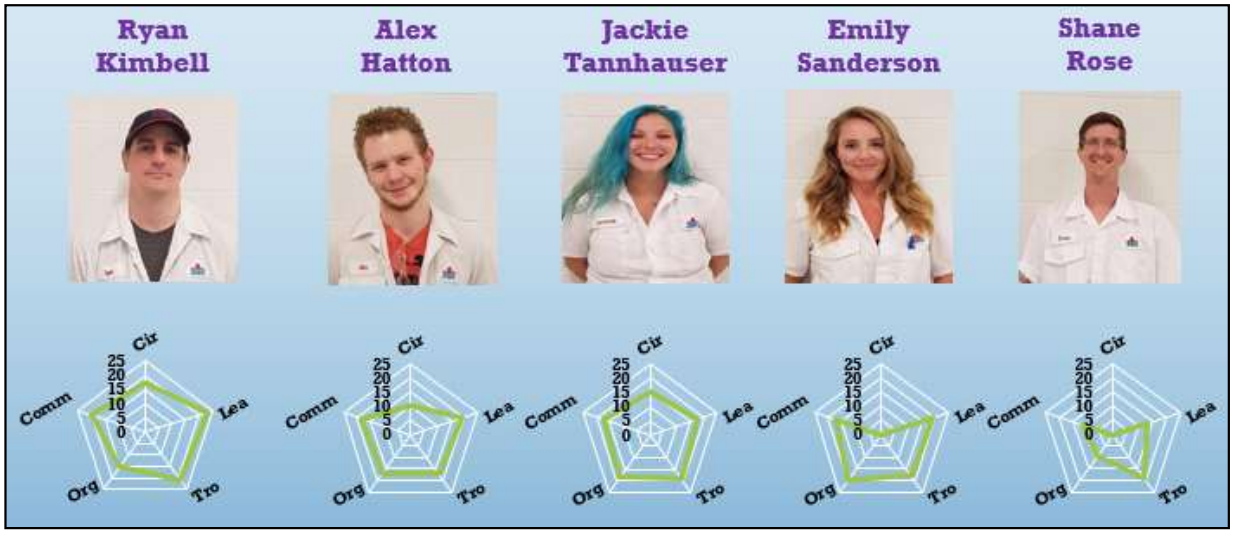
Team Member	Wade Horan	Andy Wilson	Angelique Kent	Andrew MacAdam	Keagan Shaver
Root Cause	4(4)	3(3)	2(3)	4(4)	3(3)
Statistics	4(4)	4(4)	1(2)	1(1)	2(2)
Leadership	3(4)	4(4)	3(3)	3(3)	3(3)
Circle Knowledge	4(4)	1(3)	4(4)	4(4)	1(3)
Troubleshooting	5(5)	3(4)	3(3)	5(5)	3(3)
Note taking	3(3)	3(4)	4(5)	2(2)	4(4)
Teamwork	4(4)	4(4)	4(4)	3(4)	5(5)
Quality Tools	4(4)	1(2)	1(2)	1(2)	1(2)
Score	31(32)	23(28)	22(26)	23(25)	22(25)

AVERAGE SKILLS INCREASE: 11.26%!!!

PROJECT BENEFIT/IMPACT ANALYSIS

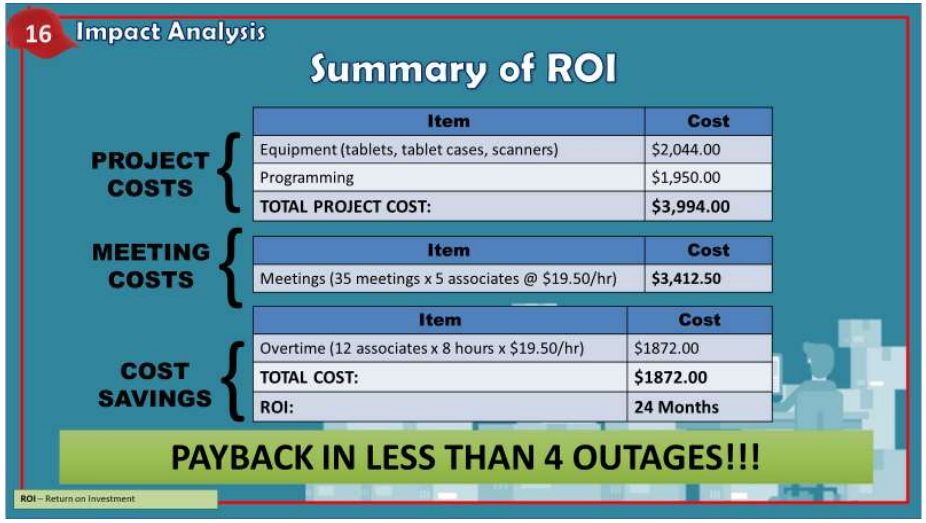
TEAM MEMBER DEVELOPMENT CHART

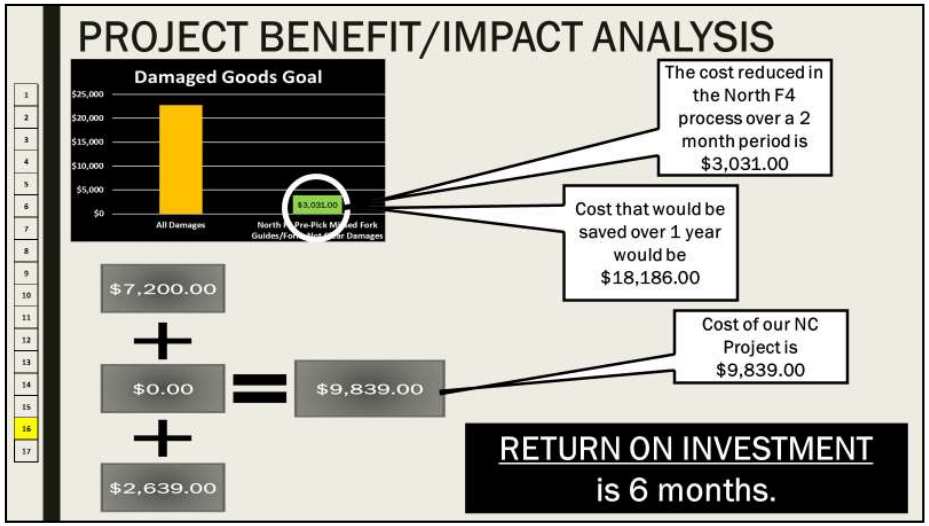
Patrick	Increased my knowledge of the problem solving techniques used in the NC Circle process. Also increased my skills with Microsoft Excel and Power Point programs.
Joe	I improved my teamwork, communication and analytical skills while learning the NC Circle problem solving process
Raffael	I learned that as a team we can accomplish change no matter the level we are at within our company.
Robert	I was shown that by working on a team that great planning, co-ordination, communciation and stregization can lead to a great achievement.
Tim	I learned what the deming circle process is and can now apply this problem solving technique to my section leader role.



16. Impact Analysis

Identify, explain and display any costs associated with the circle and the expected return on investment





16. Impact Analysis

In this step it is appropriate to do a wrap up of stakeholder involvement and acknowledgement of associates that assisted the team in the circle