Wegmans Process Improvement DPM – Fall 2011

What We Believe

At Wegmans, we believe that good people, working toward a common goal, can accomplish anything they set out to do.

In this spirit, we set our goal to be the very best at serving the needs of our customers. Every action we take should be made with this in mind.

We also believe that we can achieve our goal only if we fulfill the needs of our own people. To our customers and our people we pledge continuous improvement, and we make the commitment:

"***Every Day You Get Our Best***"

Who We Are

BAKERY TEAM

- Hope Alm- ME
- Michael Baer- ME
- Justin Grates- IE
- Sarah Kostuk- IE

CULINARY TEAM

- Brandon Harbridge- IE
- Erin McNally- ME

Mentor

- John Kaemmerlen- IE

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- Selected Projects/Timeframe – PRP
- Future Recommendations

Background

Bakery
Built in1959
600 Employees

Culinary Center
Built in 2008
90 Employees

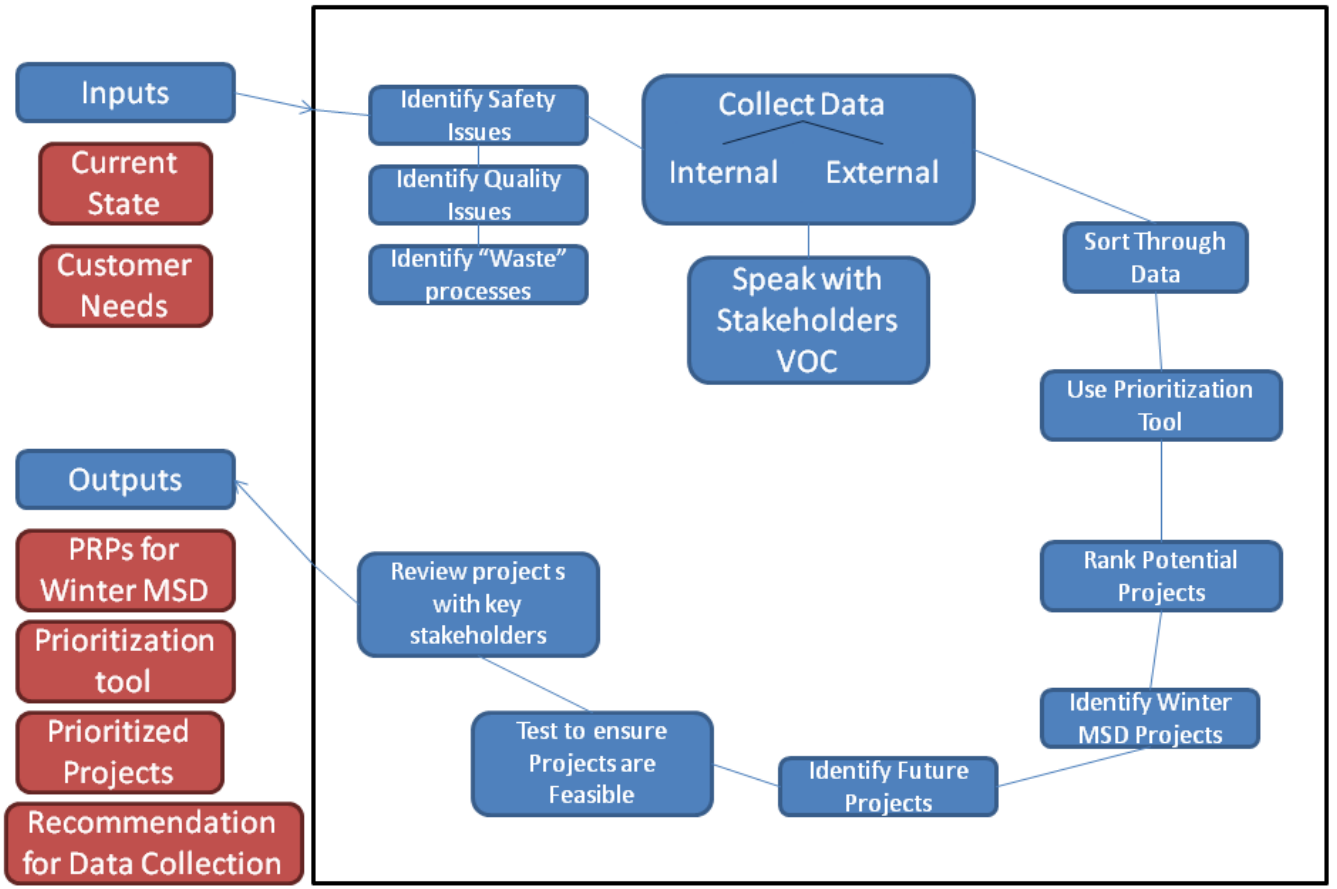
Recap of VOC

Bakery	Culinary Innovation Center
• Cost effective projects • Achievable projects • High quality processes • Minimize "waste" • Safe work environment • On time deliveries • Processes that meet demand • Standards of measuring productivity • Productive work environment • Organized Storage	• Flexible processes • Projects in line with SQF certification • High quality processes • Minimize "waste" • Safe work environment • On time deliveries • Productive work environment

Mission Statement

Wegmans desires a list of prioritized projects for the next two years. Wegmans also desires a tool to help prioritize future projects.

Function Diagram



Prioritization Tools

- Three Possible Solutions for selecting projects
  1. Yes/No Binary Sheet
  2. Scoring Matrix Model
  3. Suggestion Board open to all employees

Yes/No Binary Sheet

Observed Process: _____ **Date:** _____

Problem Area: _____

	Questions	Yes	No	Comments
1	Has there been reported injuries in the past month?			
2	Does the process run more than 8 hrs/wk?			
3	Has there been employee complaints about the process in the past month?			
4	Does the process consistently *not* meet yield?			
5	Have any full runs been discarded?			
6	Has there been product thrown out due to human error?			
7	Has the process delayed shipping?			
8	Product outside weight spec?			
9	Is standard work *not* being followed?			
10	Is this a potential ergonomic/safety concern?			
11	Has this machine had more downtime than usual?			
	Total	0	0	

Can be utilized daily!

Quick on the floor task!

Scoring Matrix Model – Bakery With Scoring

Section Criteria Weights

Data driven!

Enter Data in Cells

Data relevant but not provided at this time 11/11

Project Prioritization Matrix

Identified Problem	Safety Concerns (2x)											Quality Concerns (1.5x)							Productivity Concerns (1x)													Overall Project Score	Comments
	Max Employee Time On High Risk Process	Overtime on process	Number of Lost Time Incidents (2 years)	Number of OSHA Reportable Injuries (2 years)	Ergonomic score of Process	Number of Accident reports (Event Count)	Number of Employees Affected	Percent of Employees Affected (percent of total line staffing)	Noise Decibals in Area (8hrs exposure)	Overall Safety Score	Variance in Process Output (Product Quality)	Quality Assurance Clean Metric (swab parts per million)	Number of QA Holds in past 4 Months	Percent of Product not passing Weight limits	Number of applicable Customer Complaints	Overall Quality Score	Weight of wasted Ingredient (percent of overall ingredient weight)	Average number of Human Error Mistakes (day)	Average Number of Full Runs Wasted per day	Store Orders Met	Shipping commitment times	Standard Work Implementation	Standard Work Followed (if previous question was	Does Process meet yield Consistently	Average Monthly Percent of yield	Downtime Percentage of Machine/ Process (1-(Actual Run time/ Scheduled run time))	Achieving Takt Time	Changeover Time Met	Overall Productivity Score		
Cheesecake Depanning	5	0	0	0	5	0	1	5	5	21						0						0						0	42	
Mini Muffin Line / Mini Muffin Depanning	5	1	1	1	3	1	3	1	1	17						0						0						0	34	
Freezer / Warehouse Inventory Control	5	3	5	5	3	5	5	5	1	37						0												0	74	Employee taking wrong ingredient from warehouse
Noise Reduction Bread and Rolls	5	3	0	1	0	1	5	1	5	21						0												0	42	
Parbake Rounding Process	5	1	0	1	5	3	3	3	1	22						0						0						0	44	
Flour Sifter	1	0	0	0	1	0	1	1	1	5						0												0	10	reduce flour waste

74

44

Utilized 2-3 times a year!

R·I·T

Scoring Matrix Model – CIC with projects

	Potential Projects	Safety Concerns									Quality Concerns					Productivity Concerns									Time Duration	Cost (ROI)	Feasibility	Overall Project Score	Comments
		Max Employee Time On Process	Employee Lifting guidelines	Number of Lost Time Incidents	Numebr of OSHA Reportable Injuries	Number of Employees Affected	Noise Decibals in Area	Number of employees with negative change in hearing	Number of Employee Complaints	Overall Safety Score	Product Quality	Product Safety	Equipment Cleanability	Number of Customer Complaints	Overall Quality Score	Yield	Service level	Output per labor Hour	Process Availability	Process Performance	Process Flexibility	Inventory	Capacity/Throughput	Overall Productivity Score					
Multidisciplinary	improve flatten chicken line	1	0	0	0	3	0	0	0	4	3	0	1	3	7	3	1	5	3	1	1	0	1	15	Y	Y	Y	34	
	reduce waste in wokery cutting operation	5	1	0	0	1	1	0	0	8	3	3	1	3	13	3	1	3	3	5	0	0	0	15	Y	Y	Y	51	
	minimize downtime due to CIP process	5	0	0	0	3		0	1	9	0	0	5	0	5	0	3	5	5	0	5	0	5	23	Y	Y	Y	49	
	improve PPIs - flow problems with thicker products	3	0	0	0	3	1	0	0	7	0	0	5	0	5	5	1	3	3	1	3	0	1	17	Y	Y	Y	39	
	pulling and loading of chillers																												
Capstone	bale cardboard separately for better return	1	1	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0				6	
	organize carts of miscellaneous supplies, spice racks	3	0	0	0	5	0	0	1	9	0	0	0	1	1	1	0	1	0	0	0	1	1	4				24	
	determine if reducing temp of chill bath will reduce chill time	5	0	0	0	5	0	0	0	10	0	0	0	0	0	1	1	3	1	1	0	0	1	8				28	
	improve storage in retaining room, freezer	1	5	0	0	5	0	0	1	12	0	0	0	0	0	0	1	1	1	0	0	1	0	4				28	
	Reducing labor needs around the Central Kitchen X-Rays	5	5	0	0	5	1	0	0	16	0	0	0	0	0	0	0	5	3	3	1	0	3	15				47	
	Improving product flow in R&D pilot plant	5	5	0	0	5	3	0	0	18	0	0	0	0	0	1	3	3	5	3	3	0	3	21				57	
	improve staging of plates and dies for quick changeovers of m	1	3	0	0	3	1	0	0	8	0	0	1	0	1	0	0	0	0	0	0	0	0	0				18	
	optimize # of totes and track them	1	0	0	0	3	0	0	0	4	0	0	0	3	3	0	0	0	0	0	0	0	0	0				13	
																								0					
Partial Projects	improve cutting process of butter and cheese	1	3	0	0	1	1	0	1	7	0	0	1	0	1	1	0	1	0	1	0	0	1	4				20	
	improve ergonomics - lifting, twisting, bending with heavy items	1	5	0	0	5	0	0	1	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0				24	
	Packaging waste reduction	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0	
										0																			

34

Freezer and Warehouse

- The current state of the Freezer and Warehouse areas are in disarray causing issues in safety, quality, and productivity.
- The objective is to standardize the organization of the areas using the lean tool, 5S, and to implement a system to control the inventory of warehouse and freezer ingredients.
- Staffing:
  - 4 IEs: 5S understanding, analyze ergonomic score for process, provide standard work, project management, inventory control

5S and Inventory Control

Parbake Process

- The current process is a safety and ergonomic concern due to repetitive motion and leaning over a conveyor to complete task.
- Look into a way to improve the process by adding some type of mechanical assistance.
- Staffing:
  - 2 IEs: Evaluate the process on human motion, ergonomics, production speed, avoidance of creating a bottleneck, Process design
  - 2 MEs: Develop mechanical assists with the process of rounding. Little circuit work may be needed.

Process Improvement with mechanical assistance

Flatten Chicken Line Process Improvement

- Currently, the flatten chicken line is not as efficient as it could be. There is no standard work, and the ideal amount of labor is unknown.
- The objective is to streamline and standardize the process. The handling of the product, the layout, and automated transport can be looked at for improvement.
- Student Staffing:
  - 2 IE's: Evaluate layout, implement standard work
  - 2 ME's : Develop mechanical assist for transportation of product

Standard work and mechanical assistance

Wegmans Thoughts

- Binary tool is simple enough to be used by departments other than engineering group
  - First Pass
  - "Just do it" project vs. Long term Project
- Way to make the tool simpler to use
- Shows the areas where they can improve on data collection
- How to score proactively on safety
- Liked the amount of different groups and people the group spoke with

Overall pleased with outcomes

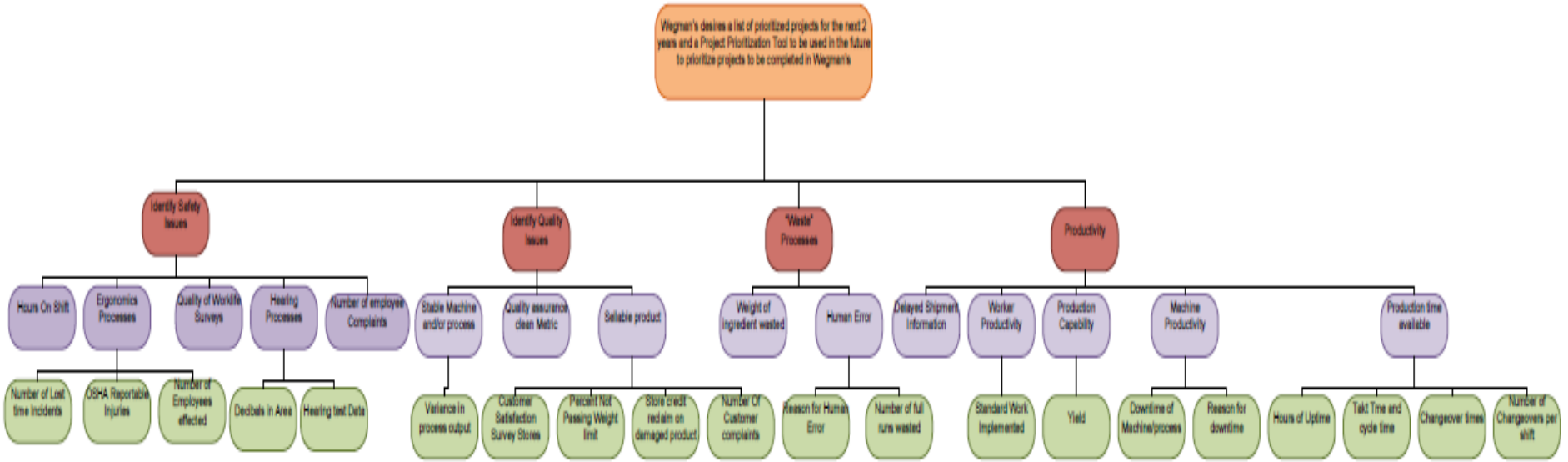
Next Steps/Recommendations

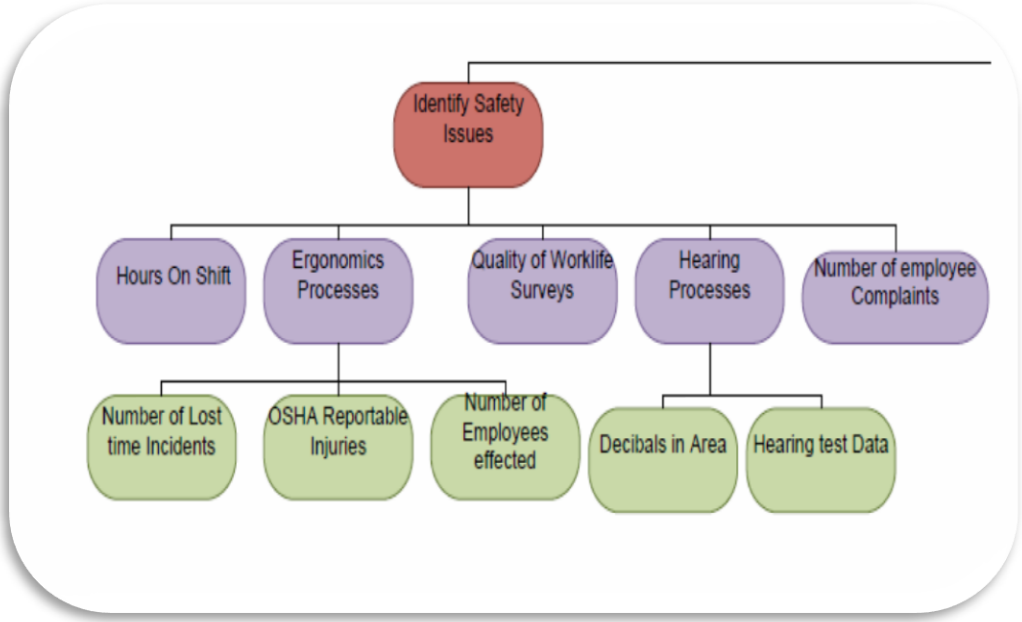
- Future DPM Group
  - Continuation of Prioritization Matrix
  - Focus on data collection
  - Look at projects we were unable to score
  - Give Wegmans better list of prioritized projects
- Wegmans
  - look into a way to collect data that was missing from the prioritization matrix
  - Use yes/no binary tool on the floor

Questions?

Appendix

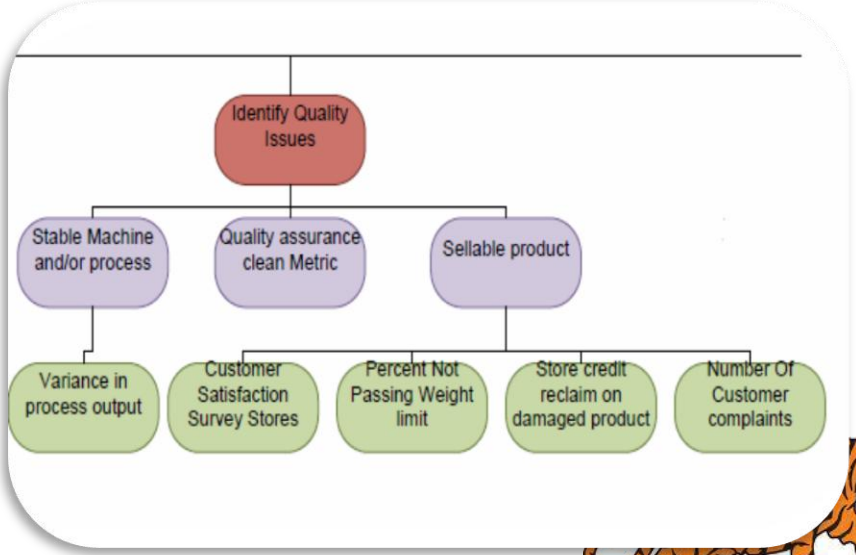
Function Tree: Bird's Eye View



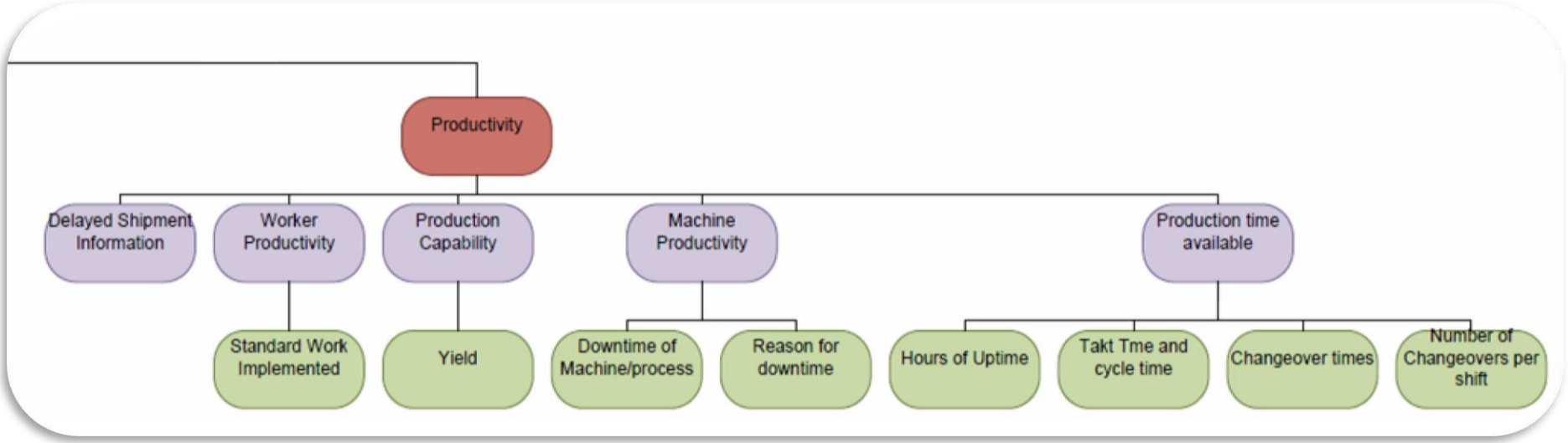


Safety Issues

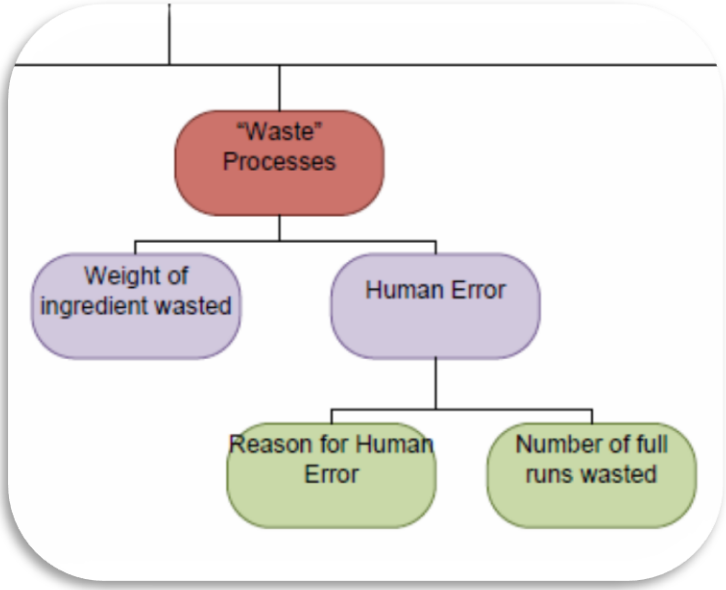
Quality Issues



Productivity



"Waste" Processes



MSD Guidelines

RIT Multidisciplinary Senior Design Project Matrix

Problem Statement	Is it Multidisciplinary Project?	Does it fit in 22weeks?	Is there Design content?	Not on Business Critical Path?	Total	Prioritization Total
0					0	0
0					0	0
0					0	0
0					0	0
0					0	0

Linked to Overall Score From Prioritization Matrix

Suggestion Board

Process Line	Problem	Frequency of Problem	Date/Time	Initials

Scoring Guidelines- Bakery

Scoring Guidelines:		Scoring Weights			
		0	1	3	5
Safety Concerns	Max Employee Time On High Risk Process	0	<= 2hrs	2<x<4	>= 4 hours
	Overtime on Process (hours)	0	<=1	2<x<4	>=4
	Number of Lost Time Incidents (2 years)	0	only 1	1<x<3	>=3
	Number of OSHA Reportable Injuries (2 years)	0	<=2	2<x<4	>=4
	Ergonomic Score of process	0	Low	Moderate	High
	Number of Employees Affected	0	<=3	3<x<8	>=8
	Percent of Employees Affected (percent of total line staffing)	0	<=.25	.25<x<.5	>=.5
	Noise Decibals in Area (8hrs exposure)	<=15	15<x<90	NA	>=90
	Number of Accident Reports (month)	0	<=5	5<x<10	>=10
Quality Concerns	Variance in Process Output (Product Quality)	0	3sigma	2sigma	1sigma
	Quality Assurance Clean Metric (swab parts per million)	0	NA	NA	NA
	Number of QA Holds in past 4 Months	0			
	Percent of Product not passing Weight limits	0	<=.25	.25<x<.5	>=.5
	Number of applicable Customer Complaints	0	<=5	5<x<10	>=10
Productivity Concerns	Weight of wasted Ingredient (percent of overall ingredient weight)	0	<=.25	.25<x<.5	>=.5
	Average number of Human Error Mistakes (day)	0	<=3	3<x<8	>=8
	Average Number of Full Runs Wasted per day	0	only 1	1<x<4	>4
	Store Orders Met	Yes			No
	Shipping commitment times	0			>0
	Standard Work Implementation	Yes			No
	Standard Work Followed (if previous question was	0	if Yes		if No
	Does Process meet yield Consistently	Yes			No
	Average Monthly Percent of yield	0	>=.5	.25<x<.5	<=.25
	Downtime Percentage of Machine/ Process (1-(Actual Run time/ Scheduled run time))	0	<=.25	.25<x<.5	>=.5
	Achieving Takt Time	Yes			No
	Changeover Time Met	Yes			No

Scoring Guidelines - CIC

Scoring Guidelines:		Scoring Weights			
		0	1	3	5
Safety Concerns	Max Employee Time On Process (per day)	0	<= 2hrs	2<x<4	>= 4 hours
	Employee Lifting Guidelines	0	minimal lifting	moderate lifting	lots of lifting
	Number of Lost Time Incidents (6 months)	0	only 1	1<x<3	>=3
	Number of OSHA Reportable Injuries (6 Months)	0	<=2	2<x<4	>=4
	Number of Employees Affected	0	<=3	3<x<6	>=6
	Noise Decibals in Area (8hrs exposure)	<=15	15<x<90	NA	>=90
	Number of employees with negative Change in hearing	0	<=2	2<x<4	>=4
	Number of Employee Complaints (month)	0	<=5	5<x<10	>=10
Quality Concerns	Product Quality	0	poor survey results	small inconsistencies	repeated customer complaints
	Product Safety	0	products won't hurt anyone	products may hurt someone	products will hurt people
	Equipment Cleanability	0	subjective		
	Number of Customer Complaints (year)	0	internal audit	1	>=2
Productivity Concerns	Yield	0	>=95%	85%<x<95%	<85%
	Service level	0	>=98%	95%<x<98%	<95%
	Output per labor Hour	0	subjective		
	Process Availablity	0	>=90%	80%<x<90%	<80%
	Process Performance	0	>=95%	85%<x<95%	<85%
	Process Flexibility	0	subjective		
	Inventory	0	little traceability issues, low inventory levels	some ingredient traceability, moderate inventory levels	no ingredients traceability and/or extreme inventory levels
	Capacity/Throughput	0	few	moderate	significant product shortages throughout some part of year

House of Quality

	Customer Requirements	Customer Weights	Preferred	How's on Shift	Number of lost time incidents	OSHA Recordables	Number of employees affected (General)	Sound level in areas	Number of line worker complaints	Variance in process output	Percent failing weight limit criteria	Store credit reclaim on unsellable product	Number of customer complains	Number of full runs wasted	Process Yield	Downtime of machine/ process	How's of scheduled machine uptime	Take Time and Cycle Time	Changeovers Met
				dwn	dwn	dwn	dwn	dwn	dwn	dwn	dwn	dwn	dwn	dwn	up	dwn	up	dwn	nom
1	Achievable goals	3		0	0	0	3	0	1	3	0		0	0	3	3	9	3	9
2	Cost Effective	3		3	0	1	3	1	0	3	9		0	3	9	3	9	0	9
3	High Quality Processes	9		0	0	0	0	0	0	9	3		9	3	9	3	1	3	0
4	On-Time Deliveries	3		1	0	0	0	0	0	3	1		3	9	1	9	0	9	1
5	Meet Demand	3		3	0	0	0	0	0	3	9		3	9	9	9	0	9	1
6	Standard ways to measure productivity	1		0	0	0	9	0	3	0	0		0	0	3	0	0	3	0
7	Safe Work Environment	9		9	9	9	3	9	9	0	0		0	0	0	0	0	0	0
8	Organized Storage	1		0	0	0	1	0	3	0	0		0	9	0	0	0	0	1
9	Productive Work Environment	9		3	3	3	9	3	9	3	0		0	3	3	3	3	9	3
0	Minimal Waste Processes	3		3	0	0	0	0	3	9	9		1	9	3	3	3	1	1

	1 Worse	2	3	4	5 Better
1	A			C	B
2		AC			B
3			AC		B
4			ABC		
5			AC	B	
6			BC	A	
7			A	C	B
8			ABC		
9			A	C	B
0				C	AB

House of Quality Cont.

Hours on Shift																
Number of lost time incidents																
OSHA Recorables		++														
Number of employees affected (General)		+	+													
Sound level in areas			+					NO INPUT IN THIS AREA								
Number of line worker complaints	+	+	+		+											
Variance in process output	+					+										
Percent failing weight limit criteria	+					+	++									
Store credit reclaim on unsellable product								+								
Number of customer complaints								++								
Number of full runs wasted	+	+				+	++									
Process Yield	+					-	+	++			-					
Downtime of machine/ process						+										
Hours of scheduled machine uptime per week						-							--			
Takt Time and Cycle Time	++					+							++	--		
Changeovers Met						+							++	--		

House of Quality Cont.

Technical Targets		Hours on Shift	Number of lost time incidents	OSHA Recorables	Number of employees affected (General)	Sound level in areas	Number of line worker complaints	Variance in process output	Percent failing weight limit criteria	Store credit reclaim on unsellable product	Number of customer complaints	Number of full runs wasted	Process Yield	Downtime of machine/ process	Hours of scheduled machine uptime	Takt Time and Cycle Time	Changovers Met
Technical Benchmarking	*Better* 5				B			B			C	B	B				
	4		B	B	A		B	C	C	C	B		C	B	B	B	
	3	ABC	AC	AC	C	ABC	AC	A	AB	AB	A	AC	A	AC	AC	AC	ABC
	2																
	Worse 1																
	Raw score	138	108	111	136	111	180	171	111	0	102	153	186	135	99	177	91
	Relative Weight	7%	5%	6%	7%	6%	9%	9%	6%	0%	5%	8%	9%	7%	5%	9%	5%

A: Energy Audit
B: Cheese Cake Dousing
C: Cookie Packaging