Lean Webinar Series: 5S & Visual Management for Non-Manufacturing

December 2, 2010







- Why 5S & Visual Management are critical to establishing a Lean Enterprise.
- How to implement 5S in an office, department, or organization-wide.
- How a visual workplace creates the clarity necessary for efficient and effective operations.
- Methods for creating a visual workplace.



Your Instructor

- Early career as a scientist; migrated to quality & operations design and management in the mid-80's.
- Launched Karen Martin & Associates in 1993.
- Specialize in Lean transformations in nonmanufacturing environments.
- Co-author of The Kaizen Event Planner; co-developer of Metrics-Based Process Mapping: An Excel-Based Solution.
- Instructor in University of California, San Diego's Lean Enterprise program.



Karen Martin, Principal Karen Martin & Associates



Building a Lean Enterprise

Optimal Organizational Performance



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Building a Lean Enterprise

Optimal Organizational Performance

Customer Loyalty FLOW Performance Metrics Value Stream Alignment Q U S Setup / Batch Size Work Balancing **Pull Systems** Reduction & Level Loading P A E L Multi-functional Workers Co-location / Cells E D Visual Management Quality at the Т Standard Work & 5S Source Y **Root Cause** Metrics-Based Analysis **Process Mapping Motivated Workforce Daily Kaizen & Kaizen Events Value Stream Mapping & Waste Identification**

Customer-Defined Value

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5S Elements

- Sort 🛠
- Set in Order
- Shine
- Standardize
- Sustain

Seiri

Seiton

Seiso

Seiketsu

Shitsuke

Tidiness

Orderliness

Cleanliness

Standards

Discipline

... and SAFETY above all else



5S: The Concept

- An organized and clean environment:
 - Simplifies work
 - Increases productivity (less time looking and waiting)
 - Reduces expenses
 - Increases the speed at which services can be delivered
 - Creates a safer workplace
 - Reduces workforce frustration; improves morale
 - Builds pride in the workplace
 - Builds customer confidence
 - Reduces exposure to risk (legal, financial, accreditation)
 - Makes it easier to train new staff
 - Makes problems visible



Organization with 1,500 employees

- Earn average of \$22 per hour
- Work 250 days per year
- Each employee spends an average of 10 minutes per day looking or waiting for equipment or material
 - Individual impact
 - = 41.7 hours wasted time per year
 - = Over a week of frustrating, unfulfilling, nonproductive time
 - Organizational impact
 - = 62,550 hours of nonproductive time
 - 30 FTEs worth of valuable resources doing non-value-adding work
 - = \$1.4 Million unnecessary direct expense per year (unloaded)



Why doesn't every work environment look like this?



Which Office Feels Better?





Office 5S

BEFORE

AFTER





AFTER





Morale Implications of Messy Workplaces





Conference Room 5S

Before

After – Standard Supplies; Ownership



5S Forms Storage Area -Before

Sid FLE

5S Forms Storage Area -After



Healthcare 5S: Before / After

Expired and mixed items



Forced rotation; A place for everything and everything in its place.



© 2010 Karen Martin & Associates

What should you 5S?

- Offices & work areas
- Hallways, lobbies, common areas
- Break rooms
- Storage areas
- Drawers, shelves, cupboards
- Hard drives; shared drives!!!!!!







5S Event Planning

Formal charter may be necessary

- Form team
- Plan report outs and/or an "open house"

Measure the current state

- To establish a baseline from which to measure improvement
 - E.g. Audits, staff surveys
 - Take before photos
 - Gather data, if relevant
- Plan your approach
 - If in active work area, how to best at least intrusive as possible
 - Define your sort area
- Gather cleaning, labeling and other supplies
 - If also implementing kanban, greater planning needed!

Perform Pre-Audit

				Visı	ual In	vento	ory Management Audit	
De	epartment:							
Da	nte:			_				Karen Martin & Associates
Αι	iditors:			-				PROFIT THROUGH SIMPLICITY
		1	2	3	4	5		
	Attribute	0-30%	31-55%	56-75%	76-95%	95-100%	Root Cause	Corrective Action
1	Material doesn't exceed kanban bin quantities							
2	No stockouts (both bins empty)							
3	Stock has been rotated							
4	No expired items							
5	Materials properly identified							
6	Each item has a specific place							
7	Bin sizes are appropriate for daily demand							
8	Standard work for supplies replenishment and use is posted							
9	Accountability for supplies management is clearly identified							
10	No material in unidentified locations							
11	Evidence of root cause analysis							
12	Storage areas are clean and tidy							

General Comments:

Consider Pre- and Post-5S Staff Surveys

ate:	PROFIT THROUGH SIMPI				
rea or department:					
-	Strongly Disagree	Disagree	Agree	Strongly Agree	
The supplies I need are available at all times.					
If an item is out-of-stock, I receive the item within the necessary timeframe.					
The supplies I need are located close to where I need them.					
Overall, I'm pleased with supplies availability, location, and organization?					
How often is an item you need out-of-stock?	times per day				
How often do you obtain supplies from your department's "official" stock locations?	times per week				
What improvements would you like to see related to supplies/materials? (Use reverse side for additional comments)					



S	pell-check	Sheet	5S Event						
	Supplies Checklist								
Leadership Sponsor			Area to Be 5S'd						
	Теа	m Lead	Event Dates						
	\checkmark	N/A*	Description						
1			Adhesive supplies - tape, push pins, rubber bands, paper clips, velcro, etc.						
2			Cleaning supplies - buckets, cleanser, sponges, rags, scouring pads/steel wool, broom, dustpan, etc.						
3			Cutting supplies - scissors, box cutters, etc.						
4			Digital camera						
5			Gloves						
6			Flip chart and markers - to communicate progress, capture ideas, categorize items, etc.						
7			Labeling supplies - label maker, labels, etc.						
8			Ladders, step stools, etc.						
9			Laminator and laminate sheets						
10			Markers - Sharpie, permanent, highlighters, etc.						
11			Organization supplies - file folders, hanging folders, containers, dividers, akro bins, etc.						
12			Paint & paint pens						
13			Post-it notes						
14			Rolling tape measure or pedometer						
15			Tape - masking, scotch, electrical						
16	Γ		Scrapers, box cutters, etc.						
17			Stapler						
18			Three-hole punch						
19			Three-ring binders						
20			Tags - red, yellow, green						
21			Tape measure, yard stick, rulers						
22			Tools - hammer, screw drivers, drill & bits, nails, level, liers, etc.						
23			Signage supplies						
24									
25									

5S Resources

- www.5Ssupply.com
- www.the5Sstore.com
- www.visualworkplace.com
- Grainger industrial supply











5S Process: Step 1

Sort

What is the "mininum necessary" to produce "maximum outcomes"?



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Objective: Reduce clutter

 Desks, drawers, counters, storage areas, hallways, walls, break rooms, treatment areas, offices, waiting areas, patient rooms, etc.

Keep only essential items

Evaluate every item

- Need is it used frequently?
- Functionality does it work optimally?
- Compliance does it meet accreditation standards and statutes?



Red Tag what is not needed on a regular basis

Description / Item Number
Quantity
Reason
Written by
Date

(or place item in a "red tag" area)

Cleve with Garbage Bin #10







Sort Set in Order Shine Standardize **SUSTAIN**





Set in Order Shine

Create designated locations Clean everything



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Set in Order

Objective: A place for everything and everything in its place

- Staff should be able to find what they need without asking anyone
- Everything should be in optimum working order
- Determine the best location for remaining items (so they're easy to find and use)
- Relocate out-of-place items
- Arrange and label items and storage areas so items are easy to find and to put away
- Set inventory limits

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Storage Guidelines

Frequency of Use	Storage Proximity
Hourly	Within arm's reach
Every shift	Within a short walk
Daily	Further away
Monthly	Department storage
Annually	Hospital or offsite storage

Mark Graban, Lean Hospitals, 2009

Clean everything!



Implement "Cord Management"





Sort Set in Order Shine **Standardize SUSTAIN**





5S Process: Step 4

Standardize

Maintain the Organized Workplace



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Standardize

- Create a method (rules) for monitoring and maintaining the first three elements (sort, set in order, shine).
 - What's the process for deciding where new material will be stored?
 - Potential rule if something new comes in, something must leave.
 - Who cleans? How frequently?
 - Who measures? How frequently?
- Heavy use of audits and visual controls.
- Must have an owner!
 - Can be rotating











5S Process: Step 5

Sustain

"Bake" 5S into the Organization's DNA



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Sustain

Ensure adherence to 5S standards through:

- Assigned accountability (may be rotating)
- Consistency
 - Regularly scheduled 5S "periods"
- Communicate expectations and results
- Training
- Measurement
- Rewards
- Self-discipline; habit
- Monitoring one another
- Modeling

Conduct weekly or monthly 5S audits



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Post-5S Audit

				Visı	ual In	vento	ory Management Audit	
De	partment:							
Da	te:			-				Karen Martin & Associates
Αu	ditors:			-				PROFIT THROUGH SIMPLICITY
						_		
		1	2	3	4	5		
	Attribute	0-30%	31-55%	56-75%	76-95%	95-100%	Root Cause	Corrective Action
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1	quantities							
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6	Each item has a specific place							
L_	Bin sizes are appropriate for daily							
7	demand							
	Standard work for supplies							
8	replenishment and use is posted Accountability for supplies							
0	management is clearly identified							
9								
10	No material in unidentified locations							
<u> </u>								
11	Evidence of root cause analysis							
12	Storage areas are clean and tidy							

General Comments:



Visual Management



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Visual Management

Make problems visible

Communicate status

Improve productivity

Improve confidence





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Visual Management Tenets

Make information *physical*; get it out of the computer!

- Progress Work tracking / status
 - Volume; WIP (work-in-process); bottlenecks
 - Types
 - Actual vs. Estimated/Target Key Performance Indicators
- Problems What needs attention?
- Results How did we do?

Anyone should be able to go into a work area and know what's going on within a few minutes without asking many questions.



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Make Problems Visual

Communicate Who, What, Where and What if?

PURCHASING Marilyn Johnson (ext 7413)

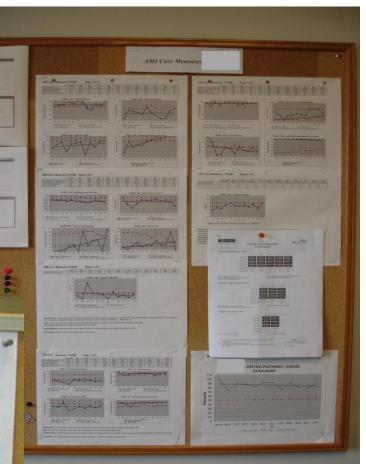
- COMMODITIES:
- Sheet Metal
- Welded Frames

BACK-UP WHEN OUT OF OFFICE: Carol Tillinghast (ext 3353)

5/8/200)9		Sac	ram	nen	to	sac	152
	Threshold Days	Total Calls	Below Threshold	At Threshold	Above Threshold	% above threshold	Suc	Current Open Calls
UNASSIGNED	2	41	20	5	16	39%		
DISPATCHED	1	3	0	3	0	0%		
FOLLOWUP	2	40	10	1	29	73%		Average Days to Complete by Week
COMPLETE	1	30	0	26	4	13%		
NEED PART	1	7	0	1	6	86%		3.0
NEED BID	1	-	0	0	0	0%		31591200 A151200 A151200 A1591200 A1591200 5131200
ON ORDER	ETA	17	1	0	16	94%		י אז אז יא יילי.
PENDAPPROV	14	7	6	0	1	14%		
CUST PARTS	ETA	-	0	0	0	0%		
PART@SHOP	2	1	0	0	1	100%		
SCHED APPT	ETA	-	0	0	0	0%		
OTHER	1	6	0	4	2	33%		
Yellow lines % above max threshold : PART@SHOP includes PART@STO UNASSIGNED includes RE-ASSIGN OTHER includes NEXT, NOTIFIED,	ORE and ON	WILLCALL St	atuses	5%				

How are we performing?

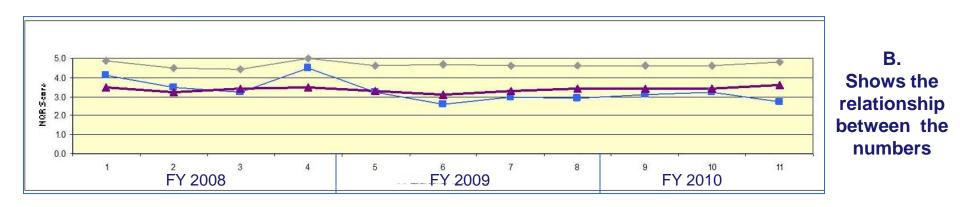
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Communicating Data: Which is more effective?

Α.	Quarter/FY	Q1-08	Q2-08	Q3-08	Q4-08	Q1-09	Q2-09	Q3-09	Q4-09	Q1-10	Q2-10	Q3-10
Numbers	Score	4.1	3.5	3.2	4.5	3.2	2.6	3	2.9	3.1	3.2	2.7
only	Benchmark	3.5	3.2	3.4	3.5	3.3	3.1	3.3	3.4	3.4	3.4	3.6
	Best	4.9	4.5	4.4	5.0	4.6	4.7	4.6	4.6	4.6	4.6	4.8

OR



Gray – highest industry quality scores
Purple – average industry quality scores (benchmark)
Blue – client quality scores

Use white boards to communicate status



P

A

Pt INT

RM#

DISP CODE

D/C FACILITY

BARRIER

CONSULTS TO CLEAR



Visual Job Aids to Standardize Work & Reduce Errors



	× -	1		
Discharge Dis	sposition Codes	Discharge D	Disposition Codes, page 2	
Code	Description	Code	Description	
Against Medical Advice - 07	AMA	Hospice – Medical Facility – 51	i.e. Volusia/Flager Hospice, Nursi home with hospice, Inpatient switched to Inpatient Hospice	
D/C to Psych Hospital – 65	3West, Halifax, South Seminole	Inpatient Rehab Facility – 62	Acute rehab (i.e. Peninsula, Brooks), not a SNF	
D/C Other Healthcare Inst – 70	ACT/Stewart Marchman			
Exp. Medical Fac 41	Inpatient Hospice Patient	Intermediate Care Facility (ICF) – 04	ALF or facility with custodial care (See list)	
Expired – 20	Regular Hospital Inpatient	Long Term Care Hospital – 63	Subacute Hospital care (i.e. Kindred, Select Medical)	
Home – 01	No other services	Short Term Gen Hosp Inpt Care –	Transfer to another hospital	
Home w/Home Health	Home Health Care	02	(not specialty)	
Svcs – 06 Hospice – Home – 50	Home with Hospice	Skilled Nursing Facility – 03	SNF (See list)	
ELORIDA HOSPITAL		ELORIDA HOSPITAL DILANO 1.1 06-28-10		

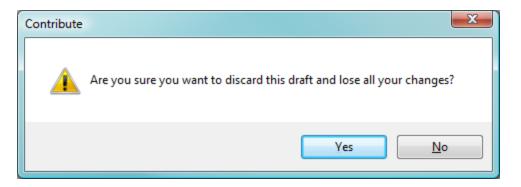
Pre-improvement – 40% errors Post-improvement – 10% errors



Pre-improvement – 15% errors Post-improvement – 5% errors

Visual Feedback - Make It Harder to Make Errors

3. Amazon.com Checkout: Verify Address			Ô	🕯 🔹 🔝 🔹 🖶 🕈 🔂 Page
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Verify Address When finished, click the "Shij Book.	o to this address" bu	tton to proceed with you	ır order. Or you may returr	n to your Address
Important Messag There is a problem with you		n. Please fill in all require	d address fields.	
Full Name:	Karen Martin			
Address Line1:	345 S. Miller Street address, P.O. bo	ix, company name, c/o		
Address Line2:	sectment, suite, unit,	pullume		
City:				
	Please supply a city	for this address		
State/Province/Region:	CA			
ZIP/Postal Code:	92122			
Country:	United States		~	



Visual Management Tool for Reducing Interruptions During Medication Administration



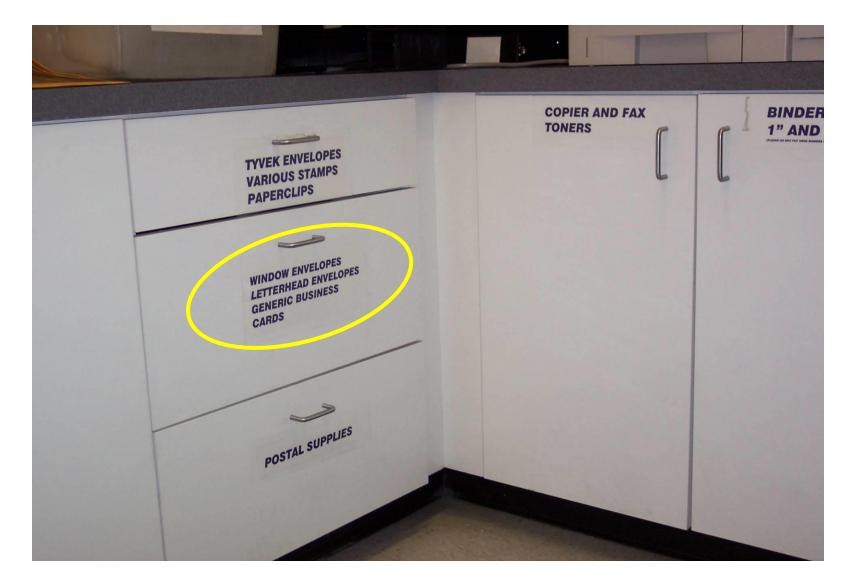
Standardize Work - Visually



Label Everything



Stage 1: 5S / Visual Management Label Everything

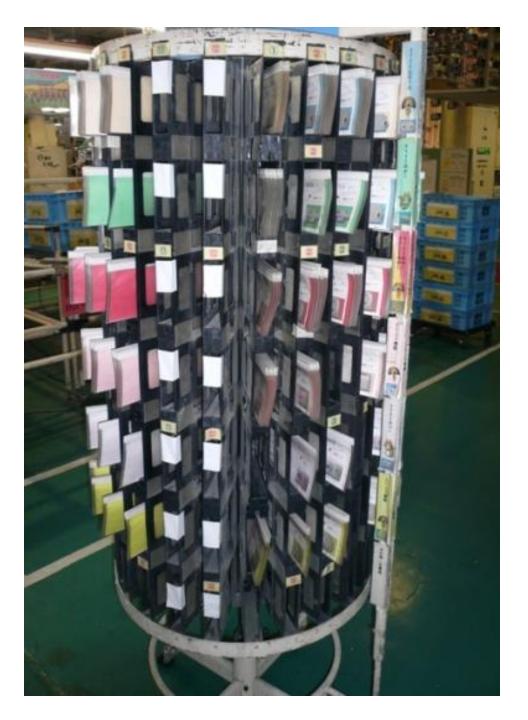




Stage 2: Open shelving



Heijunka Wheel – Visual Management of Incoming Work

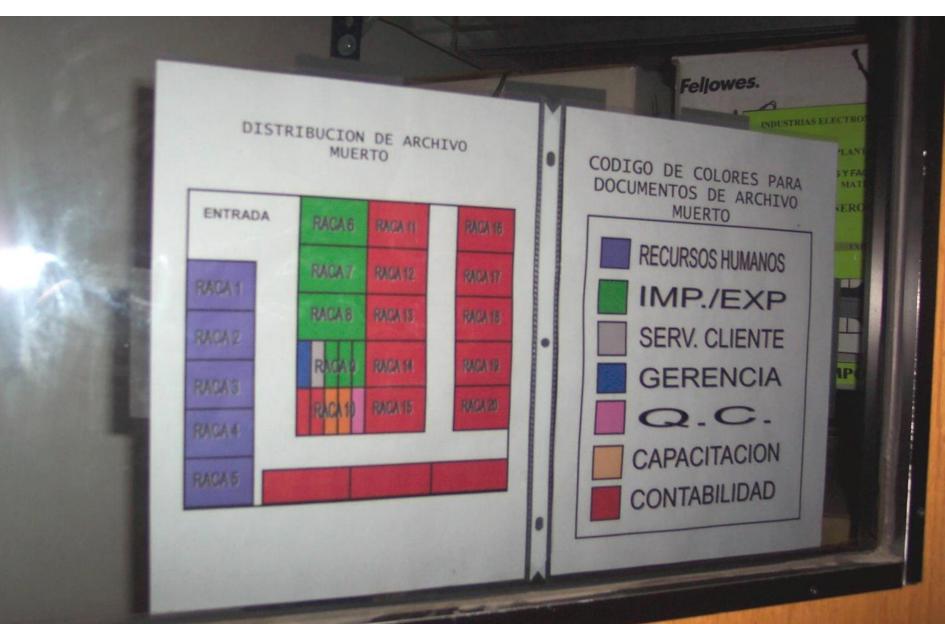




Heijunka for the Office



Strong Use of Color: File Storage



Contraction of the local division of the loc

Improved File System







Anesthesia and Surgery Two-Bin System (Front and Back w/ Color)

Blue & Red Bins –

Material Management Managed

Yellow Bins –

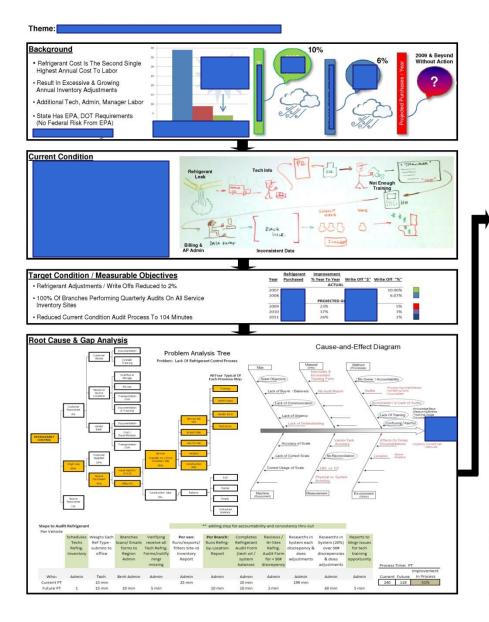
Special Orders; Department Managed

Green Bins –

Managed by Other Departments (e.g. Pharmacy, SPD, etc.)



The A3 Report – A Visual Story Board that Reflects the Problem-Solving Process



Task	Accountable	Due Date	% Cmplte	Complet Date
Improved Technician's Refrigerant Tracking form that includes directions			100 25 75 50	04/17/0
Surveys done with Service Managers: cycle counting/auditing			100 25 75 50	04/20/0
Cycle count of refrigerant on 3 vans: using old and new form			100 25 75 50	04/21/0
Surveys done with Service Admins/Dispatch on current auditing process & forms			100 25 75 50	04/24/0
Technician Visual Aide on Refrigerant: types; cylinder wt gross/empty; charge orientation; Refrigerant Safety; Disposal /Weighing Procedures			100 25 75 50	05/07/0
Refrigerant Control and Tracking section in the Tech Guide			100 25 75 50	05/07/0
Selected Branch in each Region for Pilot Tracking Program -approved by Regional Director - 5 Site ID's for each Region			100 25 75 50	05/01/0
Revised Current Existing Source Pallet Refrigerant Report for Auditing Purpose		05/08/09	100 25 75 50	
Created Refrigerant Audit Form per Region		05/15/09	100 25 75 50	
Select Admins for each Region for tracking and auditing function		05/20/09	100 25 75 50	
Created Detailed Refrigerant Control Procedures		05/21/09	100 25 75 50	
Determine Owner of Refrigerant Tracking Process		05/21/09	100 25 75 50	
Training Program for Service Managers and Techs for cycle count - 'Go- To-Meeting': 1st Phase: managers in Pilot Program 2nd Phase: all remaining mngrs.		05/27/09	100 25 75 50	
Training Program for Admins for Auditing Process - 'Go-To-Meeting' : 1st Phase: admins in Pilot Program 2nd Phase: all remaining admins		05/27/09	100 25 75 50	
Individual Branch Performance Score Card for Refrigerant of Write-Offs		06/01/09	100 25 75 50	
Run Pilot Program for 3 months; track progress; reports to Regions/Branches> start 6-1-09		09/01/09	100 25 75 50	
Company Wide Implementation		09/28/09	100 25 75 50	
Exception Reports for Managers/Admin: 1) >150# on trucks and Negative Balances 2) \$ per Lb. discrepency on PO's per		a 07/01/09	100 25 75 50	
Hand Held 2.0v - Purchases of Refrigerant thru Hand Held to eliminate 80% PO/Vendor/Admin error >> cycle count;		TBD	100 25 75 50	

Owner: A-Team (

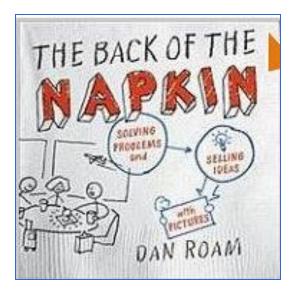
Effect Confirmation		
Task	Accountability	Frequency/Due Date
 Quarterly monitoring and adjustment 	TBD - Owner	Through 10-15-2010
 Annual write off at end of fiscal year, > 3% 	Regional Director	10-15-2010
 Branch audit compliance from 10% to 100% 	Regional Director	End Q1-2010
 Technician compliance from 19% to 100% 	Service Manager	End Q1-2010
 Audit accuracy from 0% to 98% 	TBD - Owner	End Q1-2010
Process monitoring	TBD - Owner	10-1-2010
Follow-up Actions		
Task	Accountability	Frequency
 Monitoring all processes and inventory variances 	TBD- Owner	Quarterly
Update Metrics for Branch Score Card	TBD- Owner	Quarterly

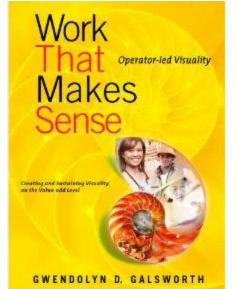
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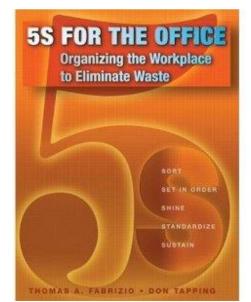
Do your visuals provide clear direction?

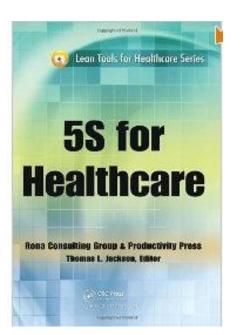


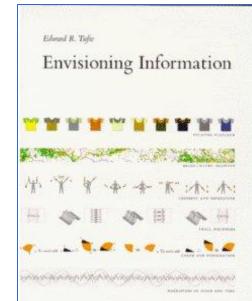
For Further Learning











The Master:

Edward Tufte, Professor Emeritus, Yale University (Political Science, Statistics & Computer Science)

You will learn...

Why 5S & Visual Management are critical to establishing a Lean Enterprise.

- How to implement 5S in an office, department, or organization-wide.
- How a visual workplace creates the clarity necessary for efficient and effective operations.
- Method for creating a visual workplace.

Next Webinar – Thursday, January 6

Making it Stick: The Four Elements for Creating Sustainable Improvements

www.ksmartin.com/webinars



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For Further Questions



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