



Using Kaizen to Align Information Systems with Business Processes

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A Little About Me

BS-IE, MS-HRM University of Alabama

Manufacturing Engineer with Delphi Automotive

SAP Master Data Manager

CPI Engineer

Currently responsible for the maintenance, accuracy,
and continuous improvement of business information



A Little About Phifer, Inc.

Key Products



Drawn Wire



Solar Control



Metal & Fiberglass
Insect Screening



Designed Fabrics

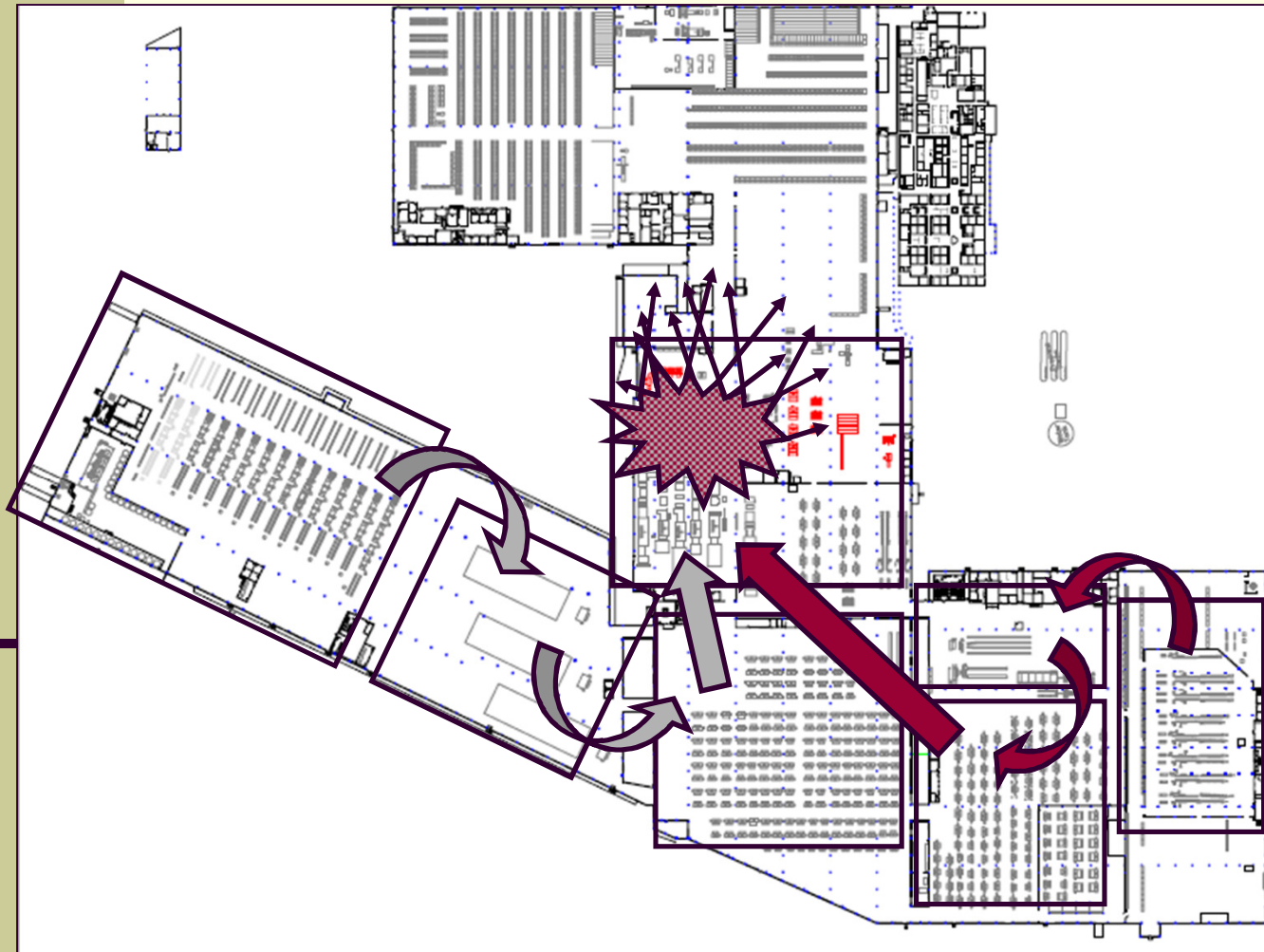
- Privately owned textile company
- Founded in 1952
- Headquarters in Tuscaloosa Alabama
- 1200 Employees



Presentation Agenda

- History behind Phifer's problems
- What is Kaizen?
- Special challenges with Business & IT process Kaizen Events
- Phifer Kaizen example with specific event tips
- Lessons Learned

The Old Days



Previous Layout

- Isolated departments of similar equipment
- Material flow controlled entirely by scheduling
- No visibility between raw materials and finished goods
- Department managers were equipment “experts”
- “We run the work order and send it on” mentality



Improvement Initiatives

1992

PhiferVision

1994, 2000

ISO 9000

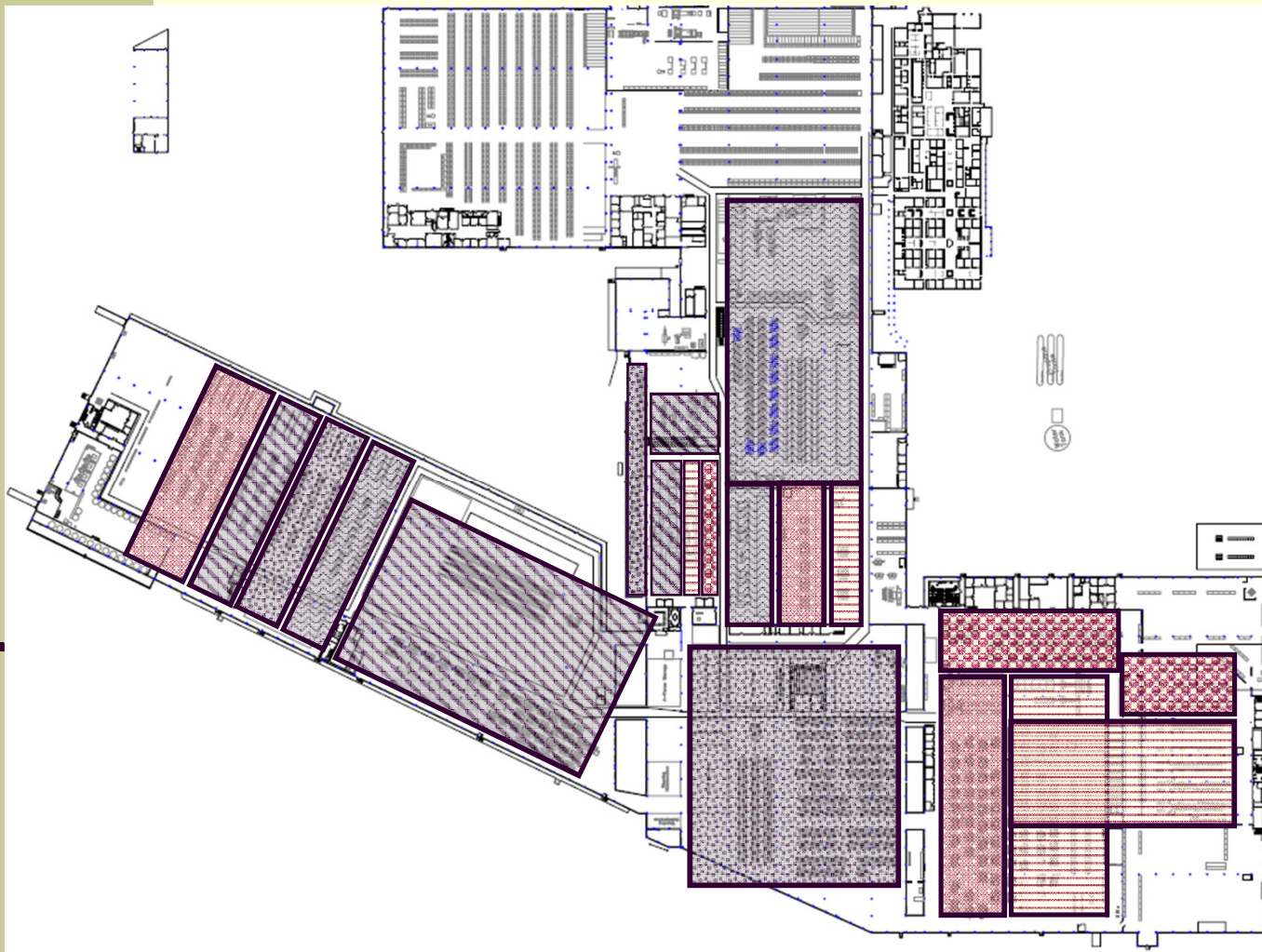
2003

SAP

2005

Lean
Manufacturing

- Custom Products
- Commodity Products
- Compete Globally



Current Layout

- Organized in to Product Lines with dedicated equipment aligned to a specific market segment
- Product line scheduler controls flow of raw material to finished goods; often with kanban
- Product Line management responsible for all processes and people within the product line
- “Our products go to customer X, Y, & Z” mentality



Kaizen Success

Results of over 300 Kaizen Events:

- 22% increase in gross profit (still had profit sharing in 2009!)
- 27% increase in overall productivity
- 60% decrease in OSHA recordable incidents;
50% decrease in overall Incident Rate;
44% decrease in medical cost/employee



The Problems

- Physical process improvements were being limited by the “system”
- Difficulties in linking product cost with process improvement
 - SAP cost vs SQDC metrics
- Nobody owned or understood the data...or really wanted to



The Problems

OPERATIONS

						Warehouse
PL 1	Process 1	Process 2	Process 3	Process 4	Process 5	
PL 2	Process 1	Process 2	Process 3	Process 4	Process 5	
PL 3	Process 1	Process 2	Process 3	Process 4	Process 5	

BUSINESS

Purchasing	R&D	Quality	CPI	Engineering	Sales
PL 1	PL 1	PL 1	PL 1	PL 1	PL 1
PL 2	PL 2	PL 2	PL 2	PL 2	PL 2
PL 3	PL 3	PL 3	PL 3	PL 3	PL 3

IT

Systems Administration

Manufacturing Execution

SAP Support

Product Master Data



The Solution

An IT process is still a process...

...and we use Kaizen to improve all of our processes....

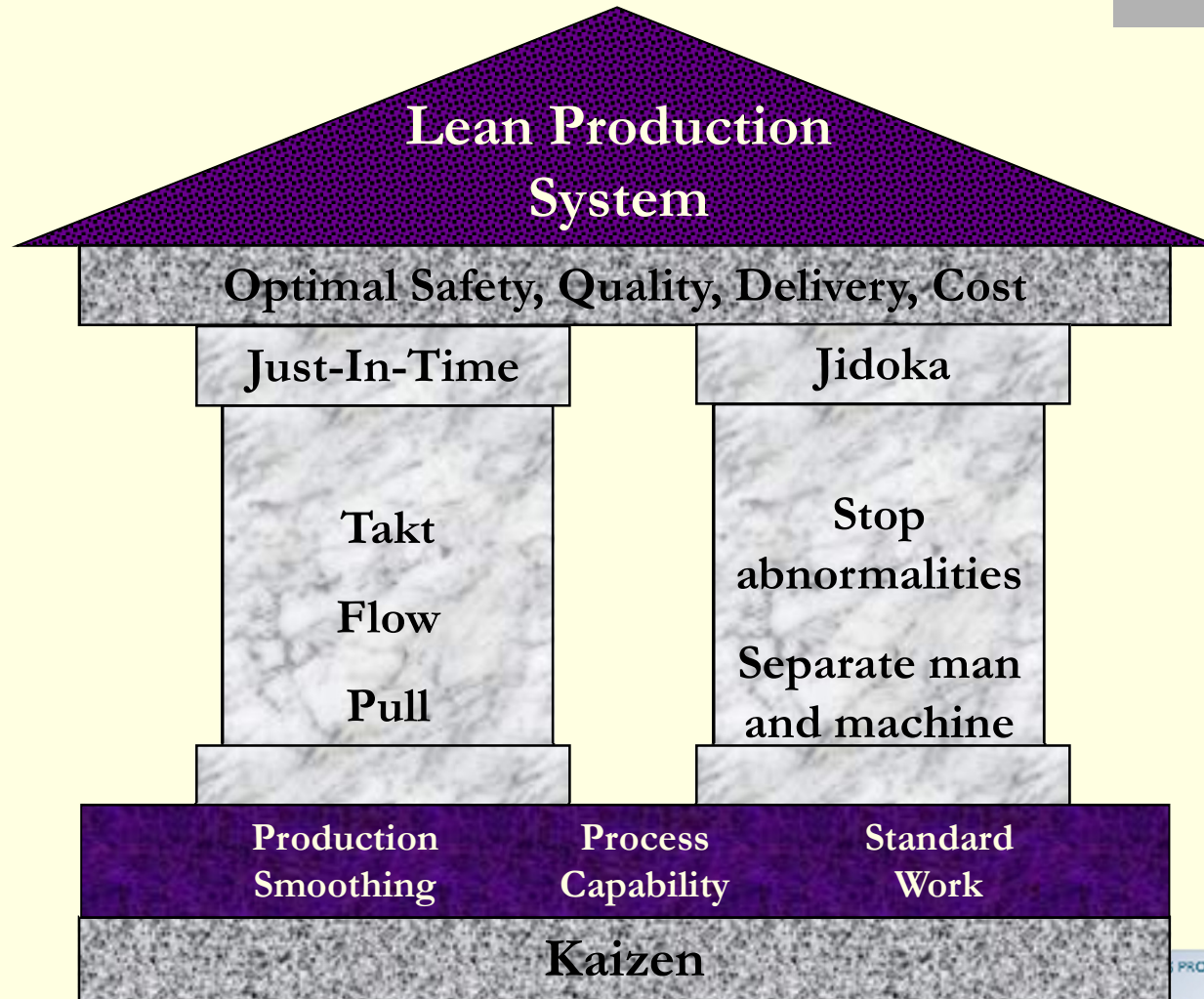




What is Kaizen



House of Lean





What is Kaizen

“Change for the better – continuously”

- **Lean Production System is the technical process of *what* to do to ensure optimal safety, quality, cost, and delivery.**
- **Kaizen is *how* to do it.**



Kaizen Event Roles & Responsibilities

- Sponsor – Senior Level Manager - The one who ultimately cares; who gives the event purpose. Removes barriers and provides accountability.
- Process Owner – Area Manager - The one who is ultimately responsible.
- Team Leader – Anyone with facilitation skills - The one who understands the Kaizen process and facilitates the team through the event
- CPI Coach – Lean Expert - The one who provides structure and coaching for the event; keeps the event moving and ensures follow-up support
- Team Members – 1/3, 1/3, 1/3 rule - The ones who identify and eliminate the waste, improving the process
- Coordinator – Sets up event & obtains necessary supplies; makes sure that “nothing falls through the cracks”



Kaizen Event Principles

- Clear objectives
 - Defined scope and goals
- Team process
 - It is **not** a group of people charged with implementing management's plan
- Tight focus on time
 - Learn by *doing*, not *discussing*
- Quick & simple
 - Creativity over capital
- Necessary resources available
- Immediate results

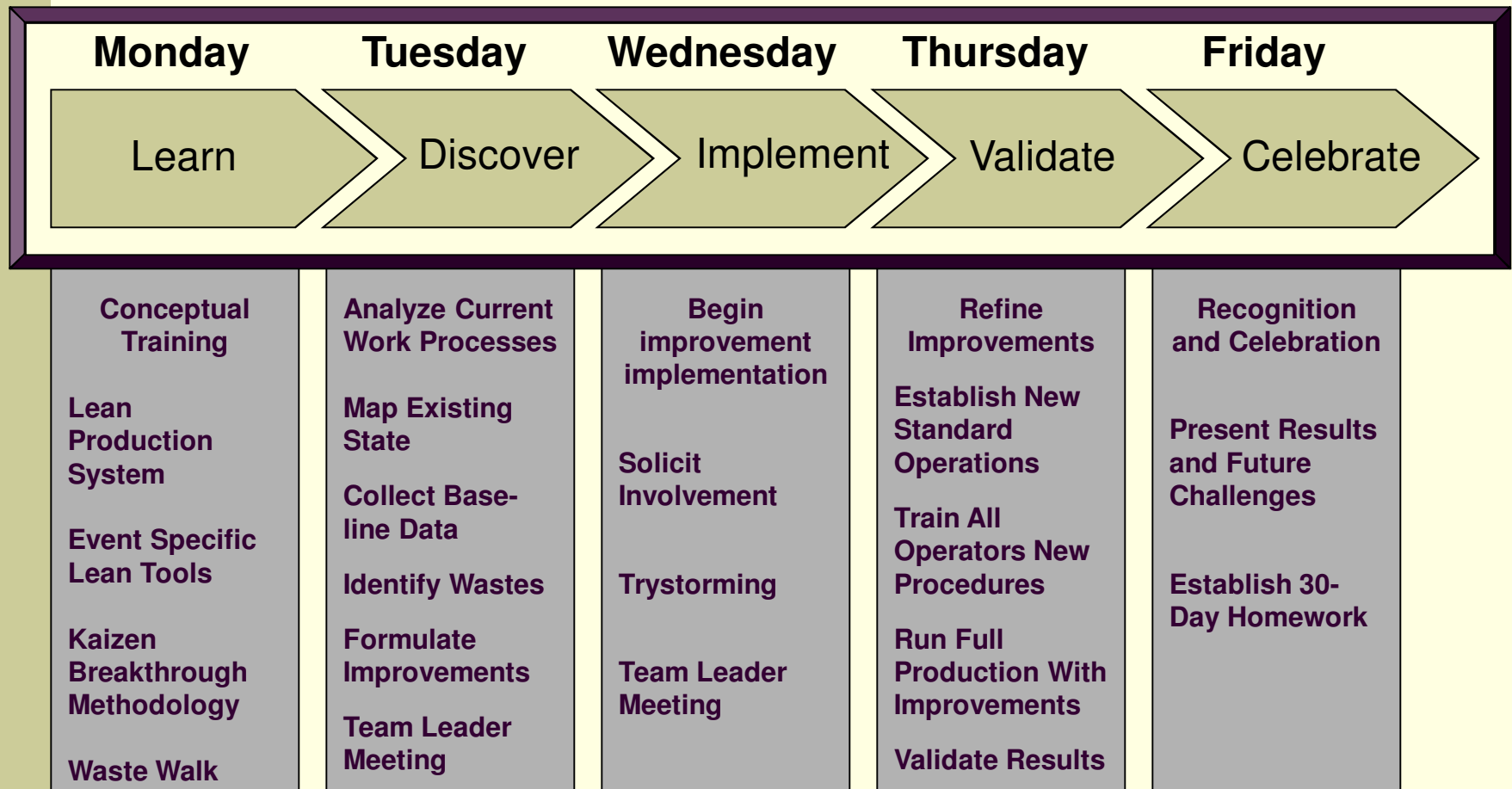


Kaizen Event Ground Rules

- Keep an open mind to change
- Maintain a positive attitude
- Never leave in a silent disagreement
- Create a blameless environment
- Treat others as you want to be treated
- One person, one voice—no position or rank
- There's no such thing as a dumb question
- Strive for BETTER, not BEST
- When in doubt, observe and find out
- Understand the process and Just Do It!



Kaizen Event Week





Kaizen Event Process

- Map the current state
- Collect baseline data
- Brainstorm improvement ideas
- Summarize ideas into Themes of Opportunity
- Map the future state
- Quick-kills & Go-forward plan



Business Process Challenges

- The process is rarely defined as a “process” – the event scope is often just trying to understand the chaos
- The process normally involves multiple functional areas – each with their own “personality”
- The process is seldom repetitive, making it hard to “see”
- The process is often difficult to measure or gather the typical metrics (productivity, quality, etc)
- Value Added vs Non-Value Added activities are often difficult to define
- Office people typically do not have standard work rules
- IT people rarely understand the business reasons for the system – they speak a different language

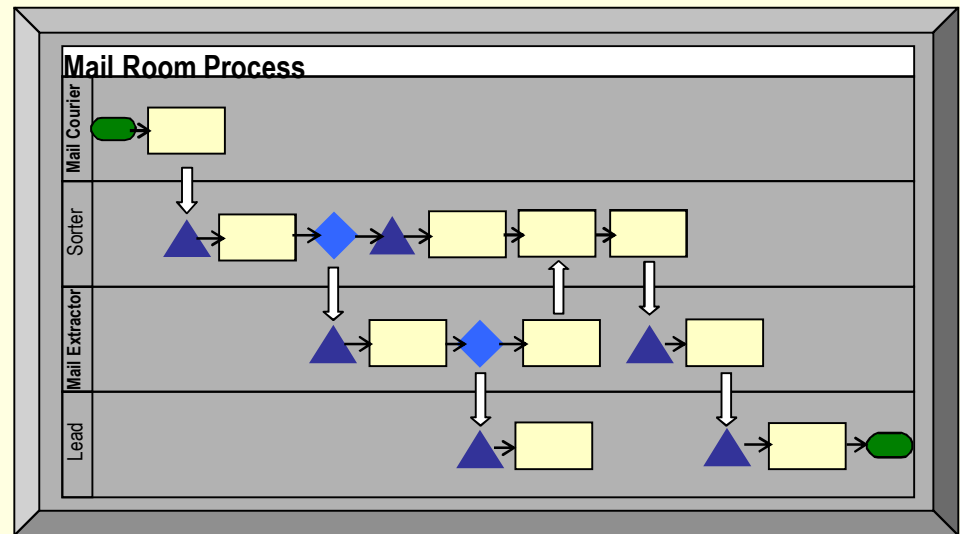
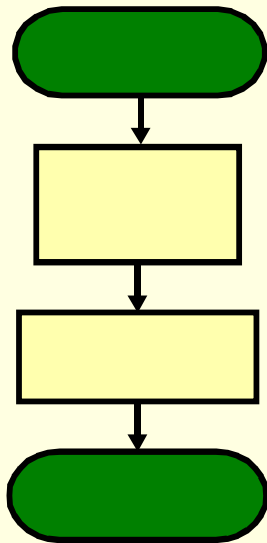


Phifer Example

- Event Scope
 - From a material number request to the notification of the new material
- Sponsor was the COO
- Goal was to develop a go-forward plan
- Team Members
 - Good representation from each major area of the process
 - Included several members with a voice - someone who wasn't afraid of *diplomatically* speaking up and questioning the current state.
 - The team leader was a good “translator”; someone who could speak to the physical process, the business process, and IT.

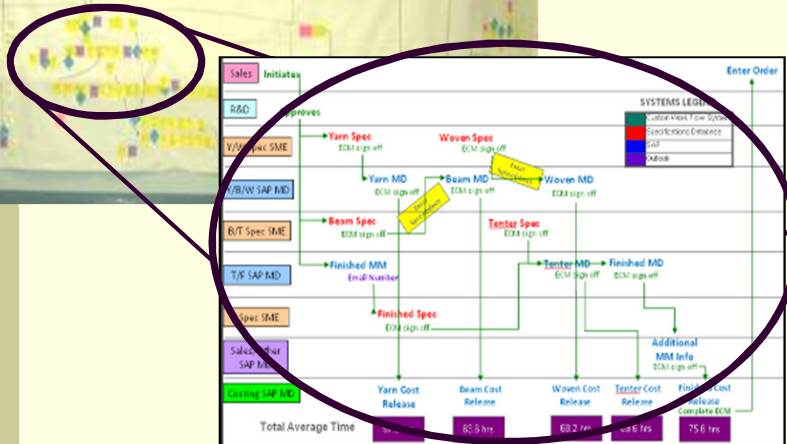
Step 1 – Mapping the Process

- 1) Create macro flow of the process
- 2) Determine the functional areas
- 3) Detail the process steps
- 4) Connect the steps with arrows





Step 1 – Mapping the Process



Success Tips

- Select the most common example to map
- Map at a level detailed enough for all team members to understand the process and the pain
- If the process is “big,” create the map in subgroups
 - Define sections and subteams
- DO NOT map what team members THINK people do – go to the actual doers or bring them to the map
- One sticky note per action
- Review often, especially if using subteams



Step 2 – Baseline Data

Item	Value
Average leadtime	4 days
Leadtime range	.7–39 days
# of people that touch the process	15
# of systems that touch the process	7
% of time information is wrong from prior step	22%
% of time information is missing from prior step	15%
# of requests per month	51
# material per week	38

Success Tips

- “Live” data instead of “dead” data
- Quantifies the process; quantifies the waste – speaks in executive language
- Ensure members understand and agree with the data

Product Line	DF				S2				S4				FG				TOTAL		
Mat State	Dev	# Mat	Avg Time	Change %	# Mat	Avg Time	Change %	# Mat	Avg Time	Change %	# Mat	Avg Time	Change %	# Mat	Avg Time	Change %	Change %	Change %	
Yam	Spec	144	56	6073	29%	2	1	2	3%	8	10	60	13%	2	41	63	3%	6333	19%
	SAP	144	12	1663	8%	2	1	2	3%	8	14	112	2%	4	0	1	8%	1777	4%
Beam	Spec	74	19	1410	5%	2	73	146	4%	7	26	136	3%	16	16	249	5%	2001	6%
	SAP	74	9	667	2%	2	48	95	3%	7	23	167	3%	16	9	137	3%	1063	2%
Yuzen	Spec	120	26	3124	11%	7	66	271	15%	26	27	1009	17%	23	14	268	6%	6092	12%
	SAP	120	16	1922	7%	7	19	130	4%	26	13	436	8%	23	14	262	6%	2833	7%
Tealer	Spec	79	18	1452	5%	14	88	1230	34%	42	36	1022	26%	63	16	1020	22%	6223	12%
	SAP	50	10	608	2%	8	18	141	4%	41	9	363	6%	62	27	1684	37%	3795	7%
D&U	Spec	177	42	7521	27%	53	15	801	33%	46	30	1373	23%	37	12	465	10%	6168	24%
	SAP	175	10	1700	6%	53	7	368	11%	46	17	772	13%	43	8	362	8%	3322	8%
TOTAL		1167		26236	66%	150		3624	9%	381		5088	14%	283		4561	11%	42508	





Step 3 – Themes of Opportunity

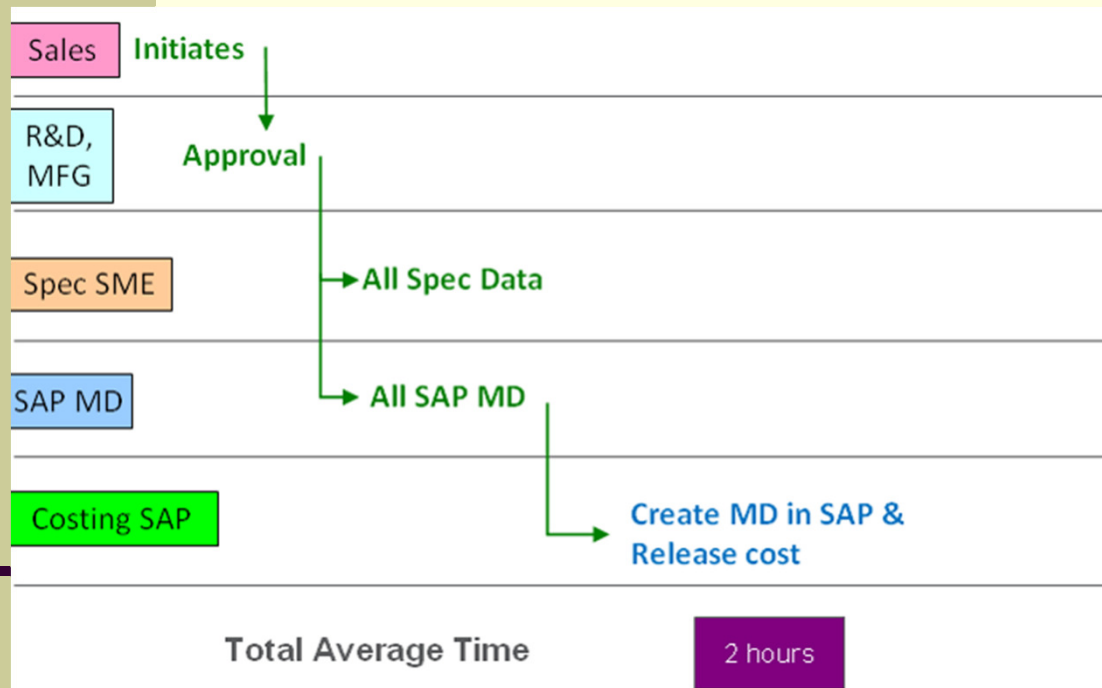
- No Flow
 - 23 handoffs; 15 people – from 8 departments;
 - 7 systems; Redundant data in multiple systems
 - Data process was based on material states (production steps); Physical process is based on product lines
- No Ownership, Visibility, or Understanding
 - Requests were easily lost or stalled
 - Nobody was sure why they did what they did or how it was used
- Not User Friendly
 - One size fits all work flow that required IT programming to change
 - Many work-arounds
- No method to control the data or ensure its quality, accuracy, or consistency
 - Frequent, random changes from various areas
 - No enforceable rules to govern data entry



Step 3 – Improvement Ideas and Themes of Opportunity

- List ALL waste observations during the brainstorming session
- DO NOT discuss solutions or allow opportunities to be judged “good” or “bad”
- The more opportunities the better
- Narrow opportunities to only 4-6 Themes
 - These will be the areas to focus on to improve the process
 - Can be grouped by types of waste or by areas of the map
 - The team will be subgrouped by themes for the rest of the week
- This is the hardest part of the event; good facilitation through this process is critical
 - The CPI Coach and/or Team Leader can suggest the themes and let the team decide if they agree or not
 - Read through all the opportunities and let the team decide on the themes
- Ensure the themes address the event objectives

Step 4 – Future State Map



Success Tips

- Map as a whole group – now is the time for the team to see it as a process and not individual, personal activities
- Start with only the Value Added steps
- Minimize hand-offs
- Make activities as standard as possible
- Create decision rules to ensure “quality at the source”

Step 5 – Quick Kills & Go Forward Plan

- Make sure the Themes of Opportunity address the gaps between the current state map and the future state.
- Create subgroups and assign each one a Theme
- Make as many changes (quick kills) to the current process as possible – minimize the follow-up activities
- Use an impact-difficulty matrix to prioritize actions





Step 5 – Go Forward Project Plan

Task Name	Task	Comment	Status	Resource	Hours	R/W	C/W	Week 1		Week 2		Week 3		Week 4		Week 5		Week 6		Week 7		Week 8		Week 9		Week 10		Week 11		Week 12		Week 13		Week 14		Week 15		
								D	W	D	W	D	W	D	W	D	W	D	W	D	W	D	W	D	W	D	W	D	W	D	W	D	W	D	W	D	W	D
Program	Activity 1/1/2018		Completed	ALC	4	2																																
	Activity 1/1/2018		Completed	ALC	16	8																																
	Activity 1/1/2018		Completed	ALC	4	4																																
	Activity 1/1/2018		Completed	ALC	15	15																																
Member Support	Activity 1/1/2018		Completed	ALC	4	2																																
	Activity 1/1/2018		Completed	ALC	5	2																																
	Activity 1/1/2018		Completed	ALC	4	4																																
	Activity 1/1/2018		Completed	ALC	3	2																																
Communication	Activity 1/1/2018		In Progress	ALC	40	16																																
	Activity 1/1/2018		In Progress	ALC	12	2																																
	Activity 1/1/2018		In Progress	ALC	12	4																																
	Activity 1/1/2018		In Progress	ALC	12	4																																
Communication and Outreach (Collaboration)	Activity 1/1/2018		In Progress	ALC	12	18																																
	Activity 1/1/2018		In Progress	ALC	4	4																																
	Activity 1/1/2018		In Progress	ALC	40	40																																
	Activity 1/1/2018		In Progress	ALC	4	4																																
Program (Member Support)	Activity 1/1/2018		Completed	ALC	16	16																																
	Activity 1/1/2018		Completed	ALC	16	12																																
	Activity 1/1/2018		Completed	ALC	16	12																																
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	Activity 1/1/2018		Completed	ALC	4	4																																
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Lessons Learned – General

- Kaizen events provide...
 - A process to follow that ensures objectivity
 - A neutral environment so everyone is on the same page
 - Deeper understanding of the problems and possibilities
 - Ownership of the changes by the areas being changed
- Business processes are different from shop floor processes in that they...
 - Involve several functional areas, often protected by border guards
 - Have communication gaps, politics, and personality clashes
 - Are not completely understood; even by those involved
- Improvements in business processes can have significant impact on the entire organization



Lessons Learned – IT Specific

- Ensure the business processes support the value-added activities, then ensure the IT systems support the business processes
- Software and programming should only be used to
 - automate **repetitive** steps
 - reduce complexity, especially by increasing visibilityNOT to
 - solve communication and training problems
 - accommodate process waste
- Let the translator do the talking
 - Often IT, business, and process improvement barriers are formed only because each person speaks a different language.



Questions

