

Value Stream Mapping



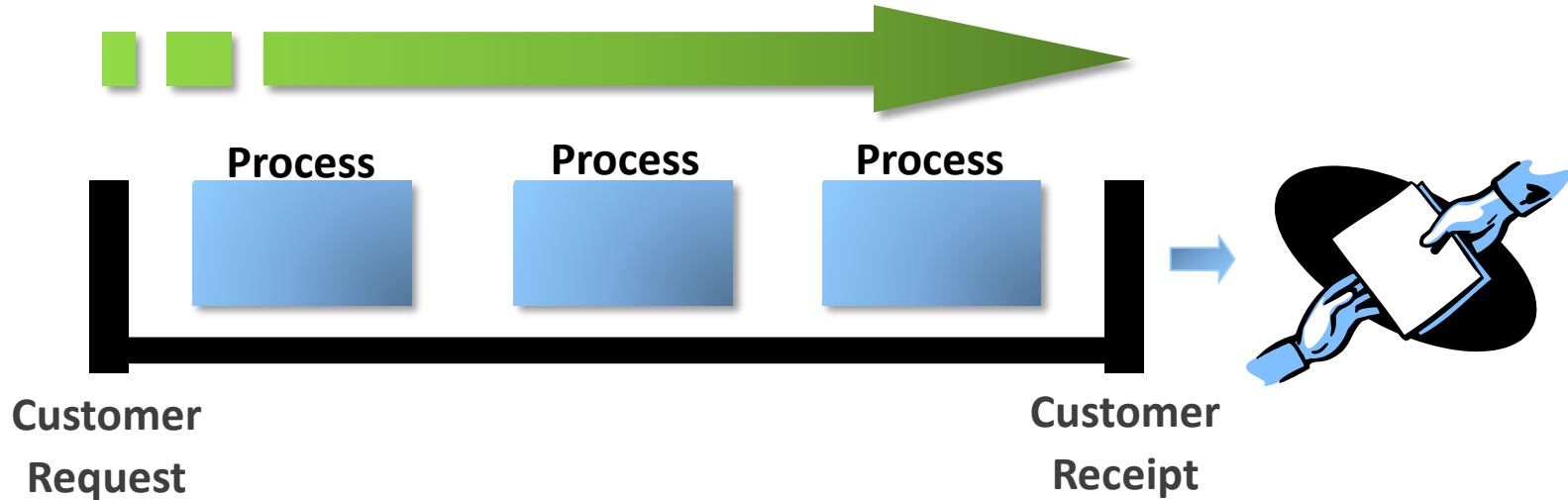
Array Architects
January 16, 2014

Agenda

1. What is a value stream? What is value stream mapping?
2. The purpose and benefits of value stream mapping
3. Structure and focus for our three days

Value Stream Defined

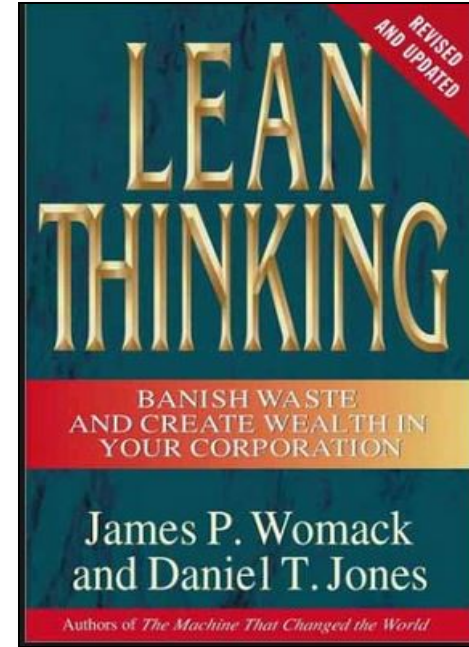
Value Stream: All of the activities required to transform a customer request into a good or service.



First defined in [*The Machine That Changed the World*](#),
James Womack, Daniel Jones, & Daniel Roos, 1990.

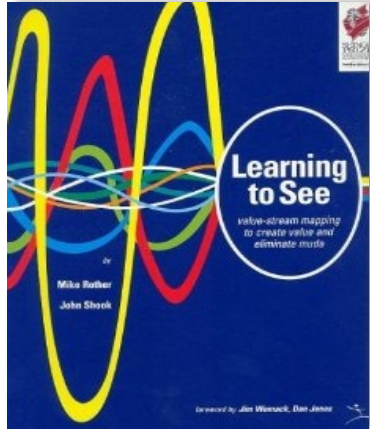
Value Stream Mapping's Roots

- Value
- Value Stream
- Flow
- Pull
- Perfection

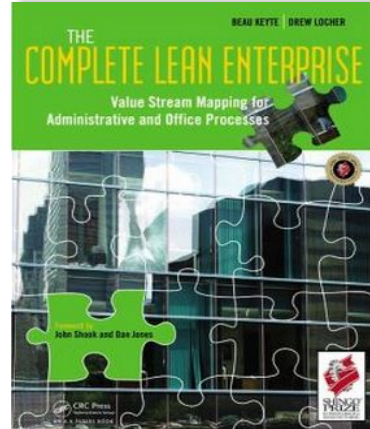


1996

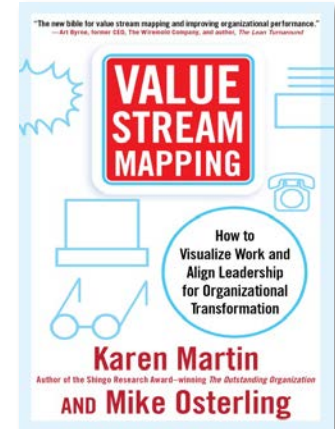
Value Stream Mapping's Roots



Mike Rother & John Shook
1999



Beau Keyte & Drew Locher
2004



Karen Martin & Mike Osterling
2013

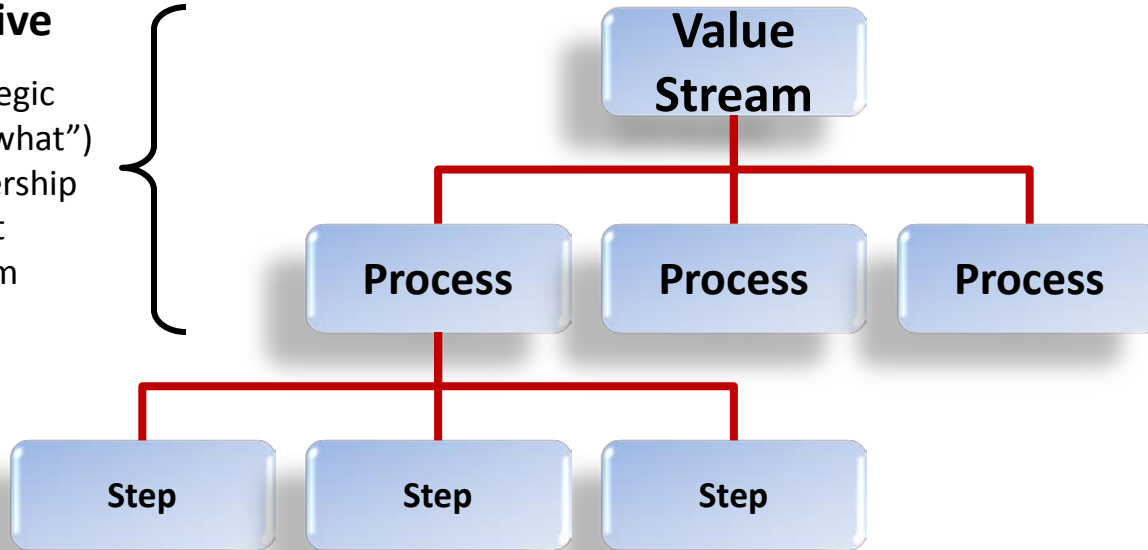
Whenever there is a product for a customer,
there is a value stream.
The challenge lies in seeing it.

— Mike Rother & John Shook, *Learning to See*

Work: Degrees of Granularity

Macro Perspective

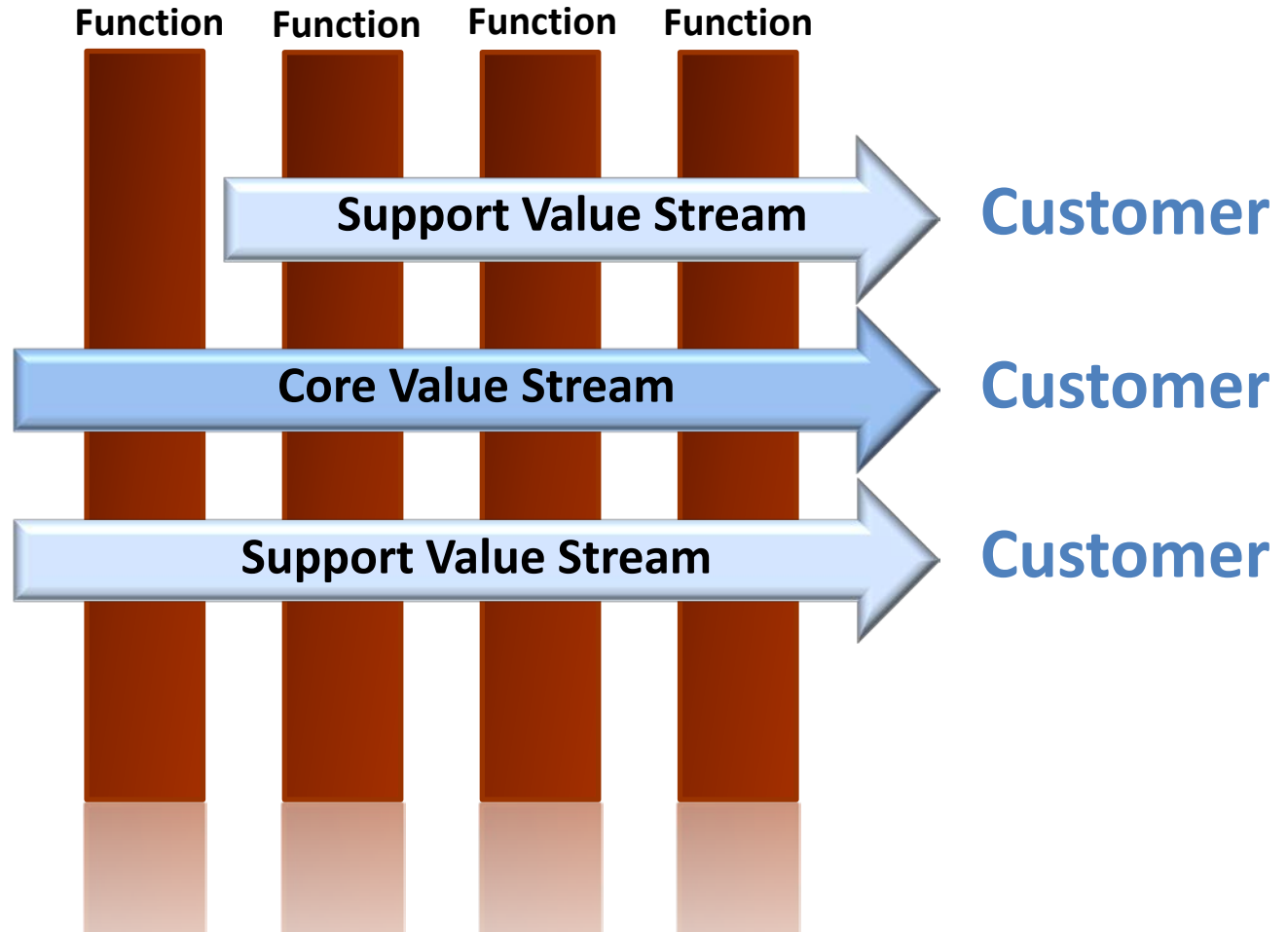
- Define strategic direction (“what”)
- Heavy leadership involvement
- Value Stream Mapping



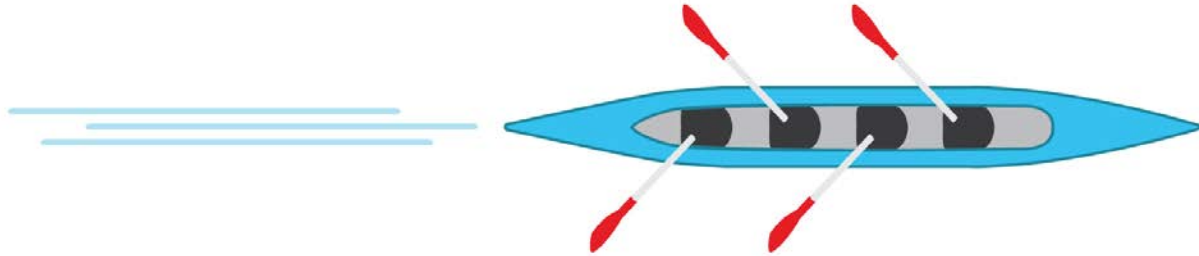
Micro Perspective

- Identify the tactical “how”
- Heavy frontline involvement
- Metrics-Based Process Mapping

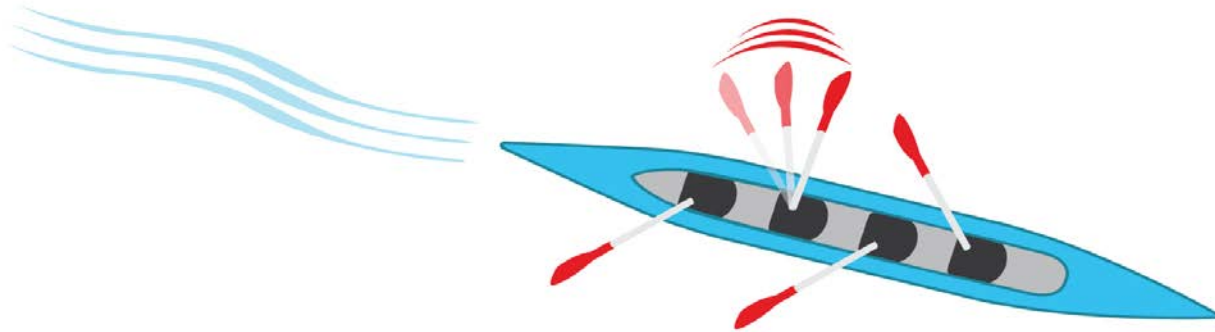
VSM Helps Break Down Functional Silos



VSM Aids in Developing Systems Thinking



System Efficiency = Optimal Value Stream Performance



Individual Efficiency = Sub-optimization

VSM Enables an Org to Get Above the Work



Value Stream Maps: Strategy Before Tactics

Where am I?
Where do I want
to go?
Which route
should I take?



I-80 option



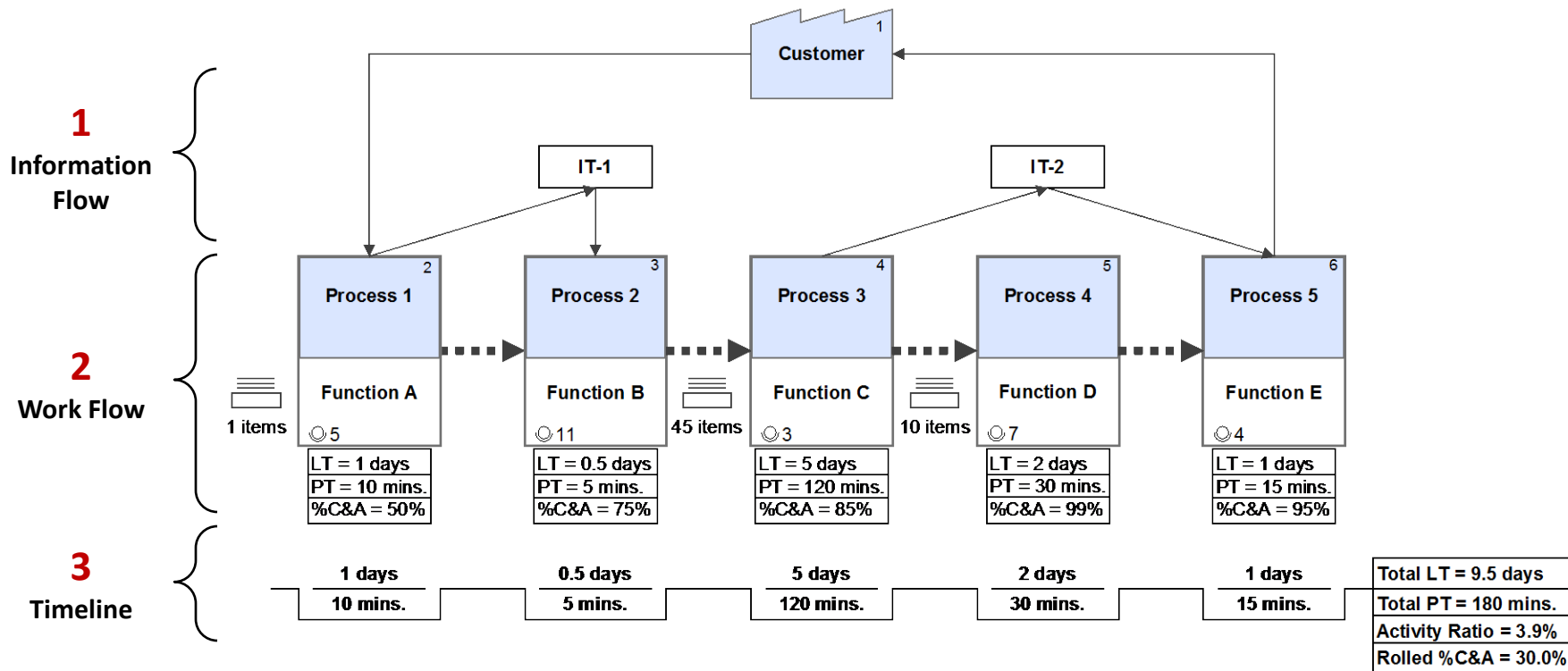
I-40 option



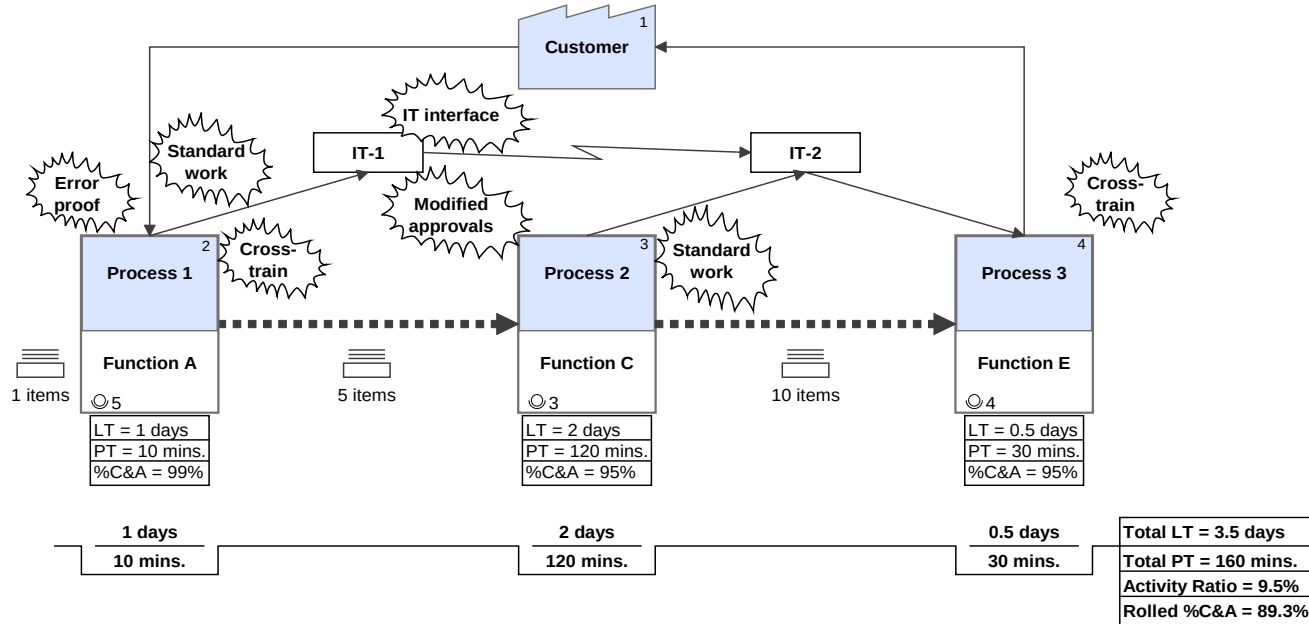
I-70 option



Basic Current State Value Stream Map



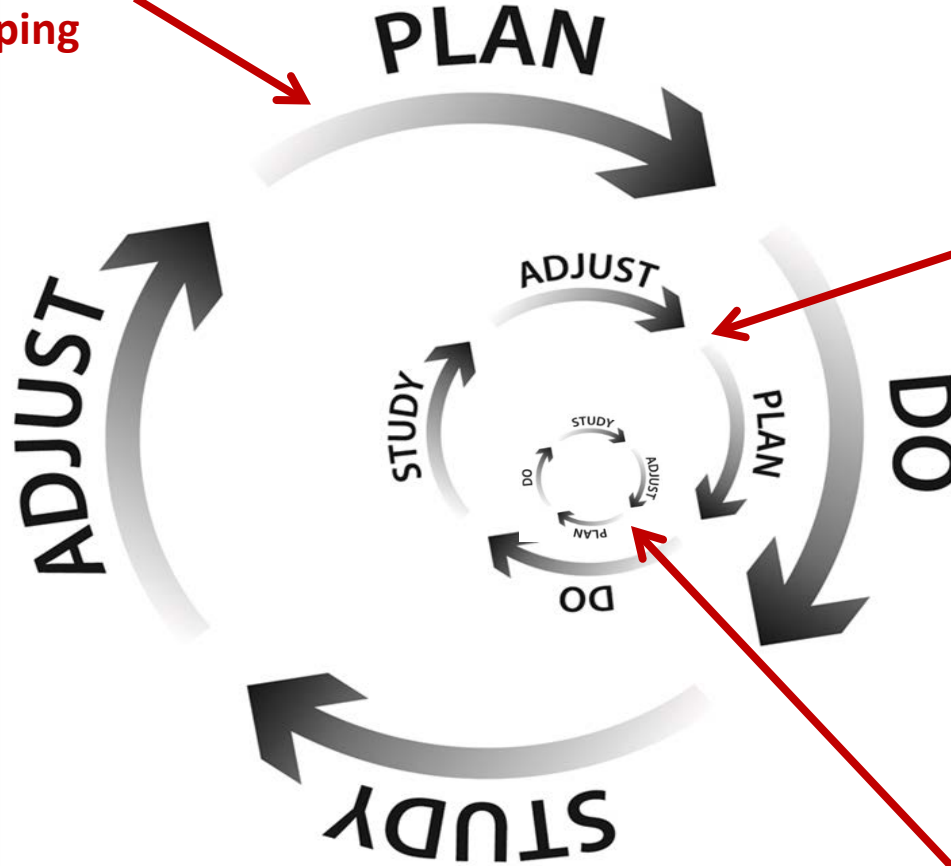
Basic Value Stream Map: Future State



Value Stream Transformation Plan																	
Value Stream		Product Y				Scheduled Review Dates											
Executive Sponsor		Jim McMahon				2/10 + bi-weekly Thu 10 am											
Value Stream Champion		Sally Brooks															
Value Stream Mapping Facilitator		Karen Martin															
Date Created		1/5/2014															
Kaizen Burst #	Improvement Objective / Hypothesis	Proposed Countermeasure	Exec. Method *	Owner	Planned Timeline for Execution												Status
					J	F	M	A	M	J	J	A	S	O	N	D	
1	Confidential Content Removed	Create procedure/train GS service engineers to properly feedback suggestions to engineering.	PROJ	Steve													0%
2		Create bulletin re: standardized headplate design to eliminate flange orientation.	PROJ	Steve													100%
3		Create visual "milestone" timeline to educate customers.	KE	Bruce													50%
4		Define technical info needed from customer and when.	KE	Bruce													50%
5		Socialize new criteria for engineering, quality, & purchasing involvement.	PROJ	Jessie													100%
6		Revise standard Ts & Cs to incorporate time limit for customer approval for final payment.	PROJ	Sally													100%
7		Error proof P.O. info (correct specs, ship to, etc.); notify customer re missing info and drop dead date.	KE	Jessie													0%
8		Create criteria for LOI acceptance.	PROJ	Mike													100%
9		Add initial project release in SF.	JDI	Jessie													50%
10		Resocialize existing customer-requested CO procedure.	PROJ	Steve													80%
11		One piece engineering flow	PROJ	Steve													10%
12		Move to one release (pump & systems)	PROJ	Bob													0%
13		Revise proposal template to limit time to 4 revisions.	JDI	Jessie													100%
14		Standardize WPS/PQR from suppliers.	PROJ	Marcia													25%
15		Create commodity management team & supplier SLAs.	PROJ	Tom													30%
16		Create trigger to release (BOMs) for purchase.	KE	Marcia													50%
17		Create pull signal for invoicing.	PROJ	Sally													50%
Agreement																	
Executive Sponsor		Value Stream Champion				Value Stream Mapping Facilitator											
Signature:		Signature:				Signature:											
Date:		Date:				Date:											

* Execution Method = JDI (Just-do-it), KE (Kaizen Event), or Proj (Project)

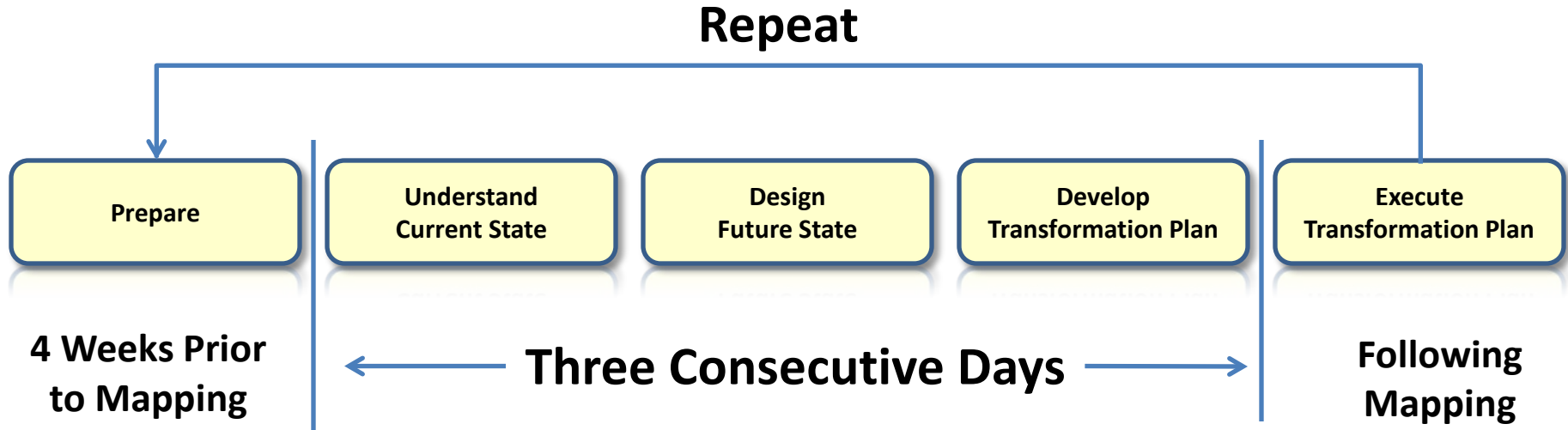
**Value Stream
Mapping**



**Executing
Transformation
Plan**

**Making
Specific
Improvements**

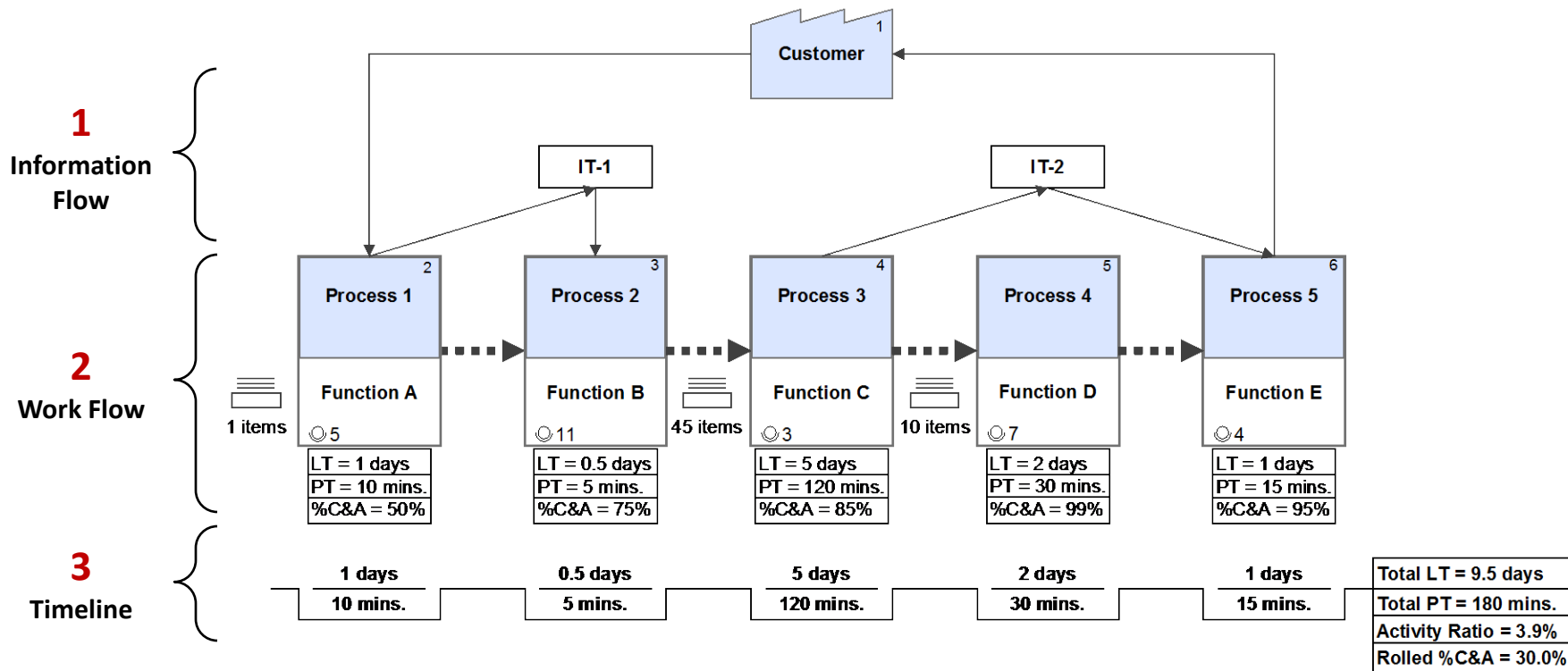
Value Stream Mapping Activity Phases and Timing



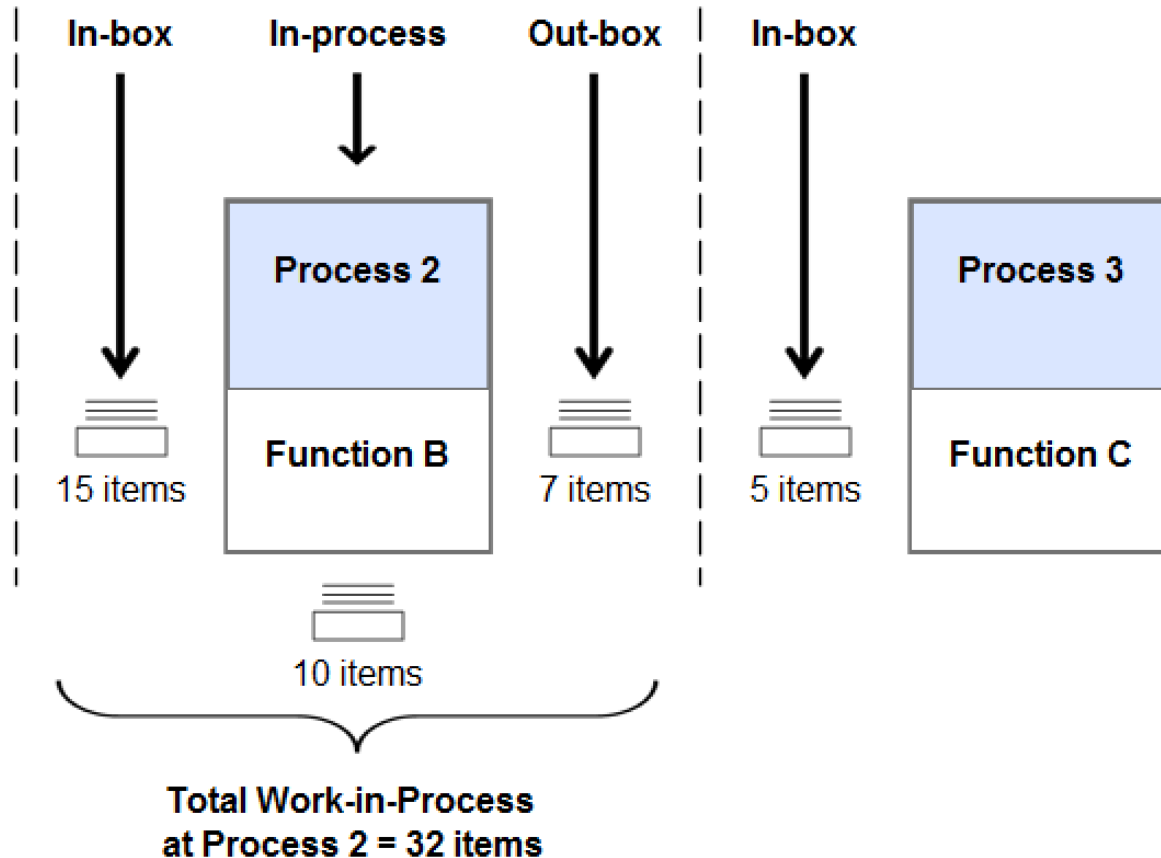
Improvement Roles

	Who?	Accountability	Practice / Tool
 Strategic	Sr. Leaders	“ <i>What</i> has to happen”	Hoshin Planning, Value Stream Mapping
	Middle Management		
 Tactical	Frontlines	“ <i>How</i> it will happen”	Kaizen Events, Process mapping Just-do-its, and Projects

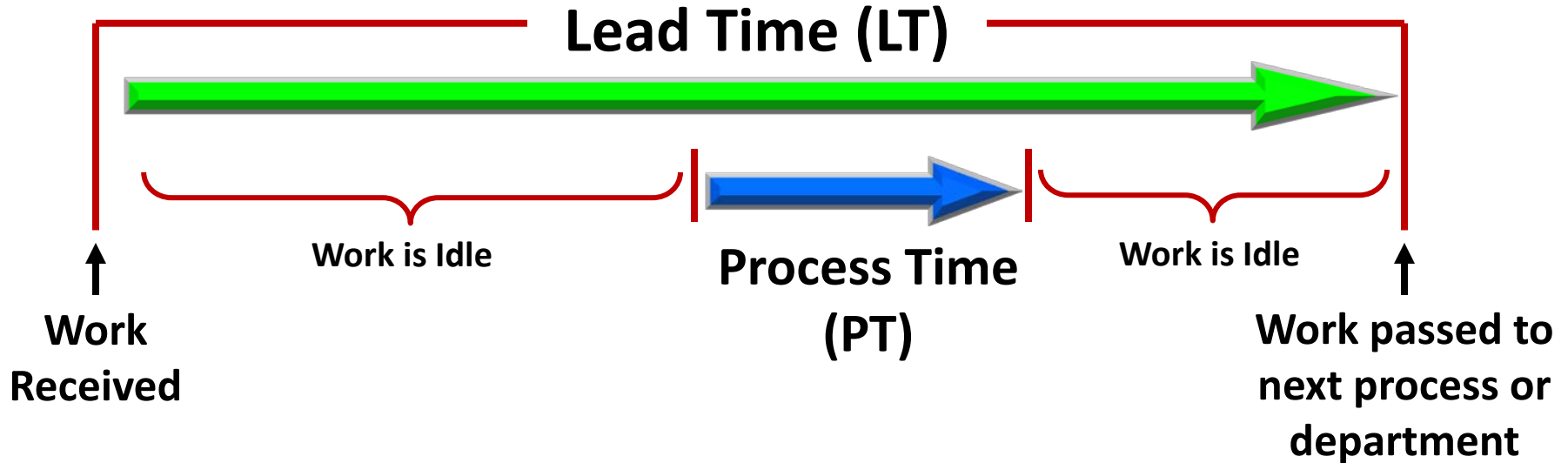
Basic Current State Value Stream Map



Three Places WIP Can Accumulate



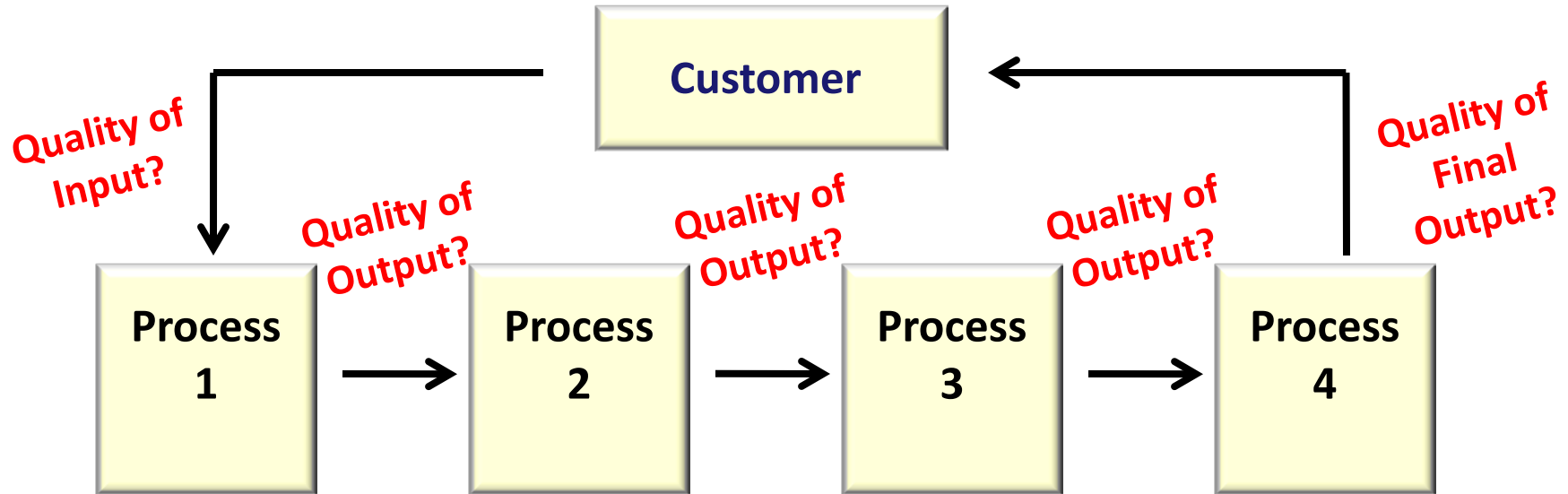
Lead Time vs. Process Time



Lead Time = Elapsed time; Throughput time; turnaround time

Process Time = Touch time; work time; cycle time

Measuring Quality: Percent Complete & Accurate (%C&A)



Future State Design Questions

- General questions
 - What are the problems or opportunities you wish to address?
 - What does the customer truly value?
- Look at:
 - Touch points
 - Delays
 - Sequencing & pacing
 - Variation management
 - Technology
 - Quality
 - Labor effort
 - How to manage the value stream & monitor performance

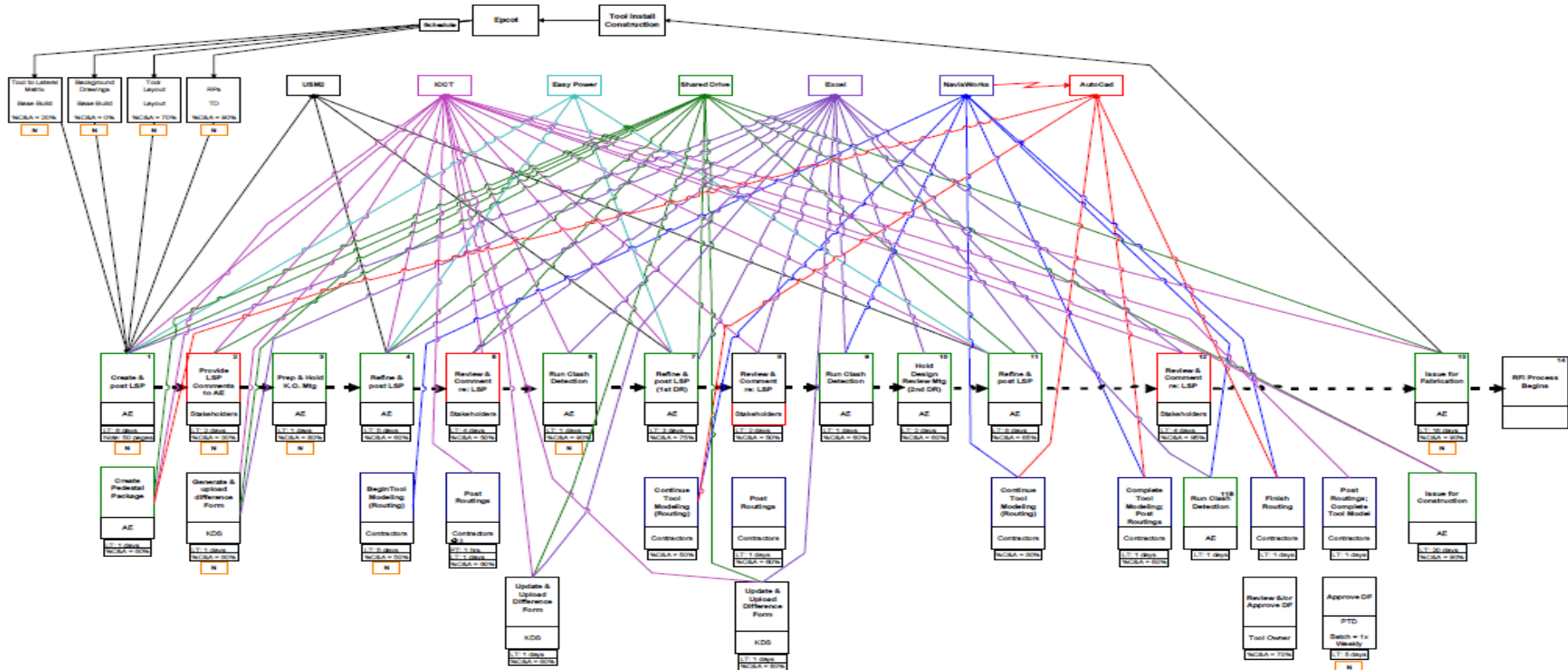
Value Stream Transformation Results

Metric	From	To	% Improvement
Timeline Lead Time	4.0 days	1.3 days	67.5%
Timeline Process Time*	59 minutes	48 minutes	18.6%
Activity Ratio	3.1%	7.6%	145.2%
Rolled % Complete & Accurate	30.5%	65.0%	113.1%
Staff Turnover (annual)	100%	0%	

* Reduction in staff 's PT frees enough capacity to earn add'l \$500K in annual revenue.


**Surprise
discovery!**

Value Stream Maps Help Visualize Problems



Rules of Engagement

1. The team starts and ends the day together; begin and end breaks together.
2. No interruptions or distractions – 100% focus; phones on silent; no email; no texting.
3. When walking the value stream, approach with curiosity, humility, and respect for the people doing the work.
4. Seek the wisdom of ten instead of the knowledge of one.
5. Use creativity before capital.
6. Finger-pointing and blame has no place: “It is what it is.”
7. Respectful disagreement is encouraged.
8. No silent objectors; don’t leave in silent disagreement.
9. One conversation at a time; no side bars.
10. What’s said in the room stays in the room.
11. Ask Why? Why not? What if?
12. Ban “Can’t” and “No, because...” from your vocabulary.
13. Think holistically (across the value stream) vs. in silos.

Charter: Critical planning, communication, and consensus-building tool

Value Stream Mapping Charter				
Scope		Accountable Parties		Logistics
Value Stream	Value stream being improved	Executive Sponsor	Required: typically VP or C-level	Event Dates & Times
Specific Conditions	What circumstances are included and excluded? (e.g., type of customer, geography; location, etc.)	Value Stream Champion	If needed—often director or manager level	3 days typically; consecutive is best; 6 hrs per day minimum; 7 or 8 hrs is best
Demand Rate	How many units this don't break, qtr, mo, or yr?	Facilitator	Required: skilled, objective person leading the activity	Base camp Location
Trigger	What initiated the process?	Logistics Coordinator	Not always needed	Office and/or workspace, quiet/private location
First Step	Task in first process block	Briefing Attendees	List the the people that are required to attend the briefings (**)	Briefing Dates & Times
Last Step	Task on last process block	** required *optional	and those whose attendance is optional (*).	Aids in consensus building and organizational learning. Typically the last hour of the day.
Boundaries & Limitations	What is the team NOT authorized to change?			
Improvement Time Frame	Typically 3-6 months			
Current State Problems & Business Needs		Mapping Team		
1	What's driving the need for improvement?	Function	Name	Contact Information
2		1 Leadership-heavy		
3		2		
4		3		
5		4		
Measurable Target Condition		5		
1	Reduce <defined metric> from X to Y (Z% improvement).	6		
2	Increase <defined metric> from X to Y (Z% improvement).	7		
3		8		
4		9		
5		10		
Benefits to Customers & Business		On-Call Support		
1	How will the business, internal and external customers, and	Function	Name	Contact Information
2	internal and external suppliers benefit from value stream improvement?	1 SMEs that may not be needed full time		
3		2		
4		3		
5		4		
Relevant Data		Agreement		
1	What data is required to understand relevant current state issues.	Executive Sponsor	Value Stream Champion	Facilitator
2	Examples: work volume & volume variation, process quality &			
3	effectiveness, market trends, customer satisfaction, employee	Signature:	Signature:	Signature:
4	engagement, financials, lead time, safety records, etc.	Date:	Date:	Date:

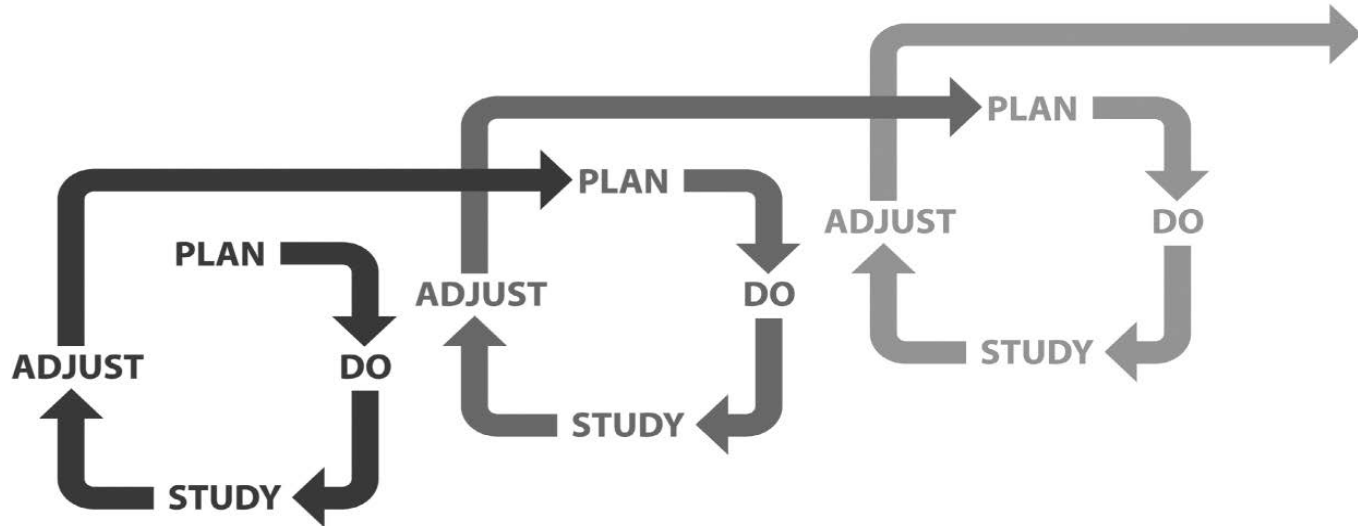
Value Stream Mapping Charter						
Scope		Accountable Parties			Logistics	
Value Stream	Project delivery	Executive Sponsor	Carl	Event Dates & Times	January 27-29, 2015 8 am - 5 pm	
Specific Conditions	Basic services with programming (90% of core work)	Value Stream Champion	Jonathan			
Demand Rate	310 RFPs per year; 85 projects per year (2014 data)	Facilitator	Karen Martin	Base-camp Location	Array Philadelphia Conference Room 1	
Trigger	Client selects Array as a potential partner					
First Step	Array receives RFP from client	Logistics Coordinator	Nancy Erb	Meals Provided	Light breakfast & lunch will be provided	
Last Step	1st patient seen (in FS Array conducts the POE)					
Boundaries & Limitations	N/A	Briefing Attendees ** required *optional	Regional VPs, Directors, and PMS.	Briefing Dates &Times	Jan 27 4-5 pm (invitees) Jan 28 4-5 pm (invitees) Jan 29 4-5 pm (full firm)	
Improvement Timeframe	9 months to realize the future state design					
Current State Problems & Business Needs		Mapping Team				
1	Wish to be a thought leader vs. commodity provider		Function	Name	Contact Information	
2	Need method for improvement prioritization	1	Business Leader	Carl Davis	cdavis@array-architects.com	
3	Desire to deliver higher value more efficiently	2	Interior Design	Pat Malick	pmalick@array-architects.com	
4	Desire to work with/on higher profile clients/projects	3	Planning	Noah Tolson	ntolson@array-architects.com	
5		4	Operations	George Shmidheiser	gshmidheiser@array-architects.com	
Measurable From/To's		5	Design	Kent Doss	kdoss@array-architects.com	
1	Increase # of projects completing at target multiplier from 54% to 80%	6	Project Management	Adrian Hagerty	ahagerty@array-architects.com	
2	Increase # of new strategic accounts that become clients from 9 to 18 annually	7	Relationship Development	Jeffrey Drucker	jdrucker@array-architects.com	
3	Increase win rate for strategic clients/projects from 48% to 75%	8	Architecture	Jason Lee	jlee@array-architects.com	
4		9	Improvement	Jonathan Bykowski	jbykowski@array-architects.com	
5		10	Construction Administration	Marsha Whitt	mwhitt@array-architects.com	
Benefits to Customers & Business		On-Call Support				
1	Business - Increased recognition as a high-value partner		Function	Name	Contact Information	
2	Customers - deliver project more efficiently	1	Design Technology	Robert Mencarini	rmencarini@array-architects.com	
3	Business - Increased profit margins	2	Business Development	Jennifer O'Donnell	jodonnell@array-architects.com	
4	Staff - Improve project opportunities by improving client base	3	Marketing	Ali Ellinger	aellinger@array-architects.com	
5	Business - Improve geographical presence in all markets	4	Quality Control / Assurance	Joe Garity	jgarity@array-architects.com	
Relevant Data		5	Studio Director	Joe Doherty	jdoherty@array-architects.com	
1	Sales effectiveness: RFQ conversion rate.	Agreement				
2	Financial: Target-to-actual Net Multiplier comparison.	Executive Sponsor		Value Stream Champion	Facilitator	
3	Client Quality: Strategic Account conversion rate.	Signature:		Signature:	Signature:	
4		Date:		Date:	Date:	

Daily Briefings



- #1 – Deepen understanding; reduce resistance
- #2 – Build consensus around future state
- #3 – Gain commitment re: transformation plan

And Repeat...



Who Owns the Value Stream?



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