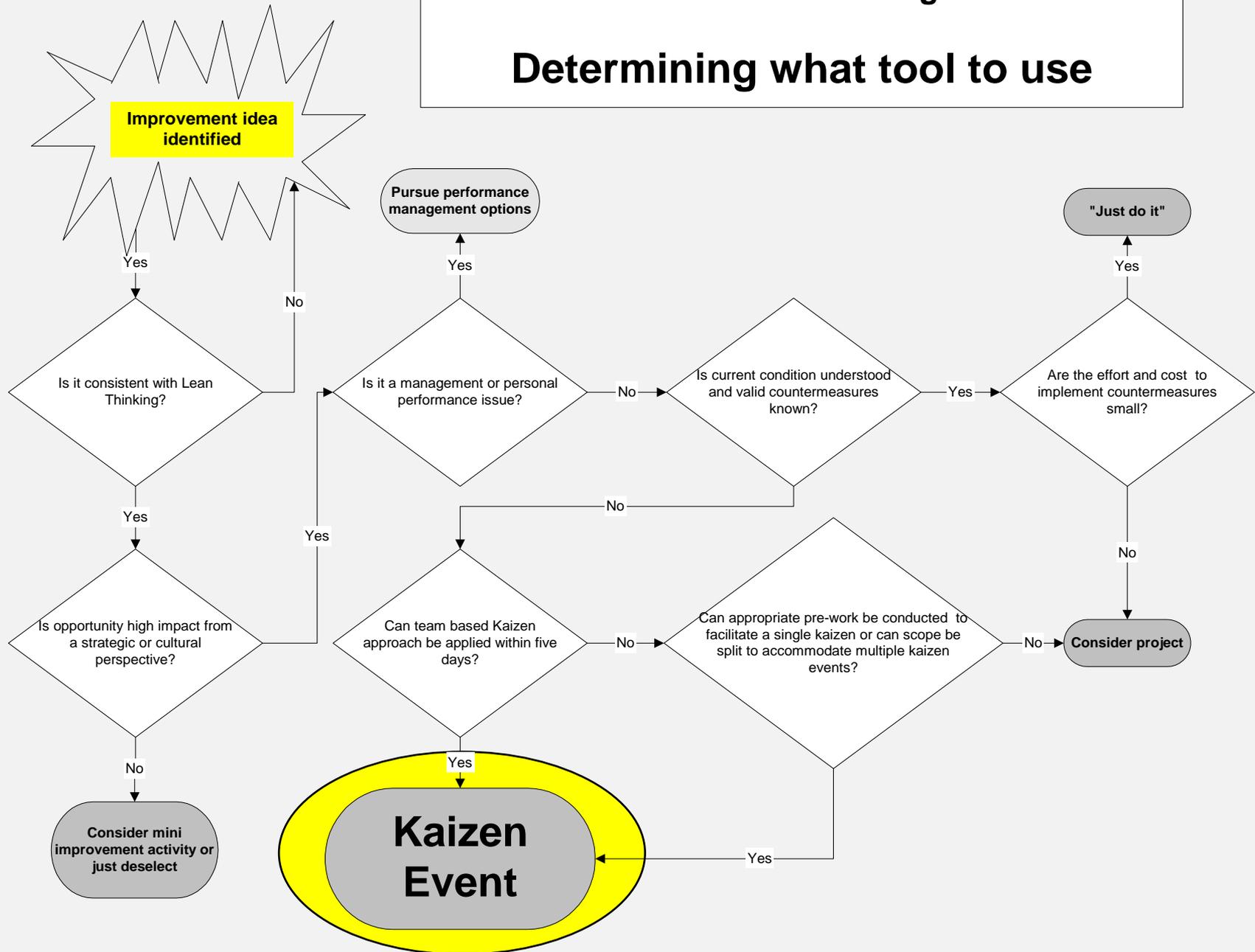


Kaizen Decision Logic: Determining what tool to use



Waste examples

Waste Category	Production Examples	Service Examples
Overproduction: production that exceeds or is made ahead of customer requirements	Upstream operation producing parts faster than downstream operation's cycle time	Issuing hard copy or electronic reports to recipients who do not need them
Waiting: Delays or idle time	Waiting to resume production on a machine that has incurred unplanned downtime	Waiting for another's review or approval of a transaction or file
Transportation: Unnecessary physical or virtual movement of materials and information	Moving material by hand, cart forklift, etc. multiple times	Physically moving files from department to department
Processing: unnecessary, excessive, or incorrect processing	Removing protective skin from a product when the customer prefers it to stay on during shipment	Conducting detailed analysis on a number of factors when only a few are critical
Inventory: Material and supplies in excess of needs	Maintaining raw material inventory that well exceeds supplier lead time	Maintaining multiple files in the work area when only one is in process
Motion: unnecessary, excessive, or non-ergonomic movements	Searching for tools, materials, or information	Repeatedly backtracking through previously accessed screens to enter data during a customer contact
Defects: Rework and scrap	Fixtures induces scratches that require subsequent tough-up of the product	Incomplete data collection requiring a follow-up call to the customer

Tools of Root Cause Analysis

Common Name	Description	Typical Application	Insight into Root Causes
5 Whys	Form/process that facilitates the asking of 5 whys (and often one "how") to determine root causes of the problem.	<ul style="list-style-type: none"> •Immediately upon identification of a problem/recurring problem •Requires initial problem statement from which the 5 whys start 	Ensures deeper penetration beyond primary and secondary symptoms to the root cause of the targeted waste
Cause-and-effect diagram (fishbone diagram, Ishikawa diagram)	<ul style="list-style-type: none"> •Visual portrayal of the potential causes and their relationships (primary, secondary, tertiary, etc.) for a narrowly defined problem •Potential causes are typically categorized by theme (for example, environment, material, machine, person, procedures, etc) 	Used when there are a large number of potential causes and/or there is ambiguity relative to the relationship between the potential causes	<ul style="list-style-type: none"> •Assists in identification of possible root causes, their relationships, and "measurability" •Hypothesized probable root causes can and should be tested to verify, exclude, and/or determine the magnitude of their contribution to the problem
Check sheets	<ul style="list-style-type: none"> •Form on which the characteristics or conditions of interest are reflected •Allows the data gatherer to record frequency as well as comments for each occurrence 	Used for situations such as downtime and other process upsets or interruptions	Provides data for what are usually unmeasured (anecdotal) root cause issues or problems
Concentration diagrams	Visual reference of location and type of defect or problem as experience in data entry/analysis	Used often to identify missing, incomplete, or inaccurate data on forms, screen, etc., and/or damage or defects on a give product	Provides type and occurrence data that will better isolate and direct further root cause analysis
Scatter diagrams (scatter plots)	Graph that reflects the relationship between tow variable (for example overtime hours and errors)	Use to identify possible relationships between changes observed in two separate sets of variables	Provides insight into cause-and-effect relationship between two variables, although a relationship does not always imply causation
Histograms	Graphic summary of variation in a set of data over a given distribution	Excellent tool to see relative frequency of occurrence of various data values	Enables patterns to emerge that are reflective of process capability
Pareto charts	Graphic ranking of factors related to problems/issues	Powerful tool to scope/re-scope team on critical few issues	Enables team to identify and focus on the vital few factors that may be root causes or lead to the identification of root causes
Process failure modes and effects analysis	<ul style="list-style-type: none"> •Matrix that reflects process steps and failure modes and effects while ranking risk of severity, occurrence, and inability to detect the failure mode •Calculates individual process step and an overall process risk priority number 	<ul style="list-style-type: none"> •Use when there is a lack of insight into important variables and how they impact quality •Can be used for proactive risk assessment 	Useful for identifying important variables within a process that affect/may affect product or service quality

Event Charter

Charter Form						
Event Name:		Source Code 5 Workflow & CCN review				
Scope	Process Name:	Prepack Kit area				
	Start Point:	Job moves to PPKIT area				
	End Point:	Job is complete (jobs are keyed in and ready to move to DC)				
	Does VSM exist?					
Value Stream Name:						
Leaders	Charter Author:	Brian Rome	Sponsor:	Kristi Carlson		
	Date Created:		Team Leader:	Tristen Griffin		
	Current Revision:		Facilitator:	Brian Rome		
Strategy	Problem Statement:	As of August, PPPKIT area is exceeding their CCN limit for FY 2012 with 17 CCN's. Things that contribute to those CCN's include: workflow, layout of area, no visual management including no designated areas for WIP/stock. Delivery of product to DC "on-time" is 67%. Things that contribute to the problems in delivery to the DC include rework and product not painted, as well as CCN issues already mentioned.				
	Corporate Strategy / goals by this Kaizen	Notes:				
	1	Deliver a perfect shipment every time				
	2					
Overview	Kaizen Summary		Key Deliverables			
	Flowchart current state. Brainstorm ideas for improvement. Future state mapping. Plan for implementation of improvement ideas. Complete implementation plan.		1	CS Map		
			2	FS Map		
			3	Implementation plan + re-layout of area		
			4	Standard work updated		
Metrics	QDCSM ¹	Metric	Units	Current	Goal	%
	1	Q	CCN's	Each	17	
	2	D	Delivery to DC	%	67	
	3	S	Safety/Ergonomics – 5S score		.1	
	4					
	5					
Resources	Name	Job Title	Training Needs			
	1	Tristen Griffin	1	Review as needed		
	2	Nicole Macht	2			
	3	Steve Nowak	3			
	4	Andrew Beckrich	Special Equipment / Materials		Date Arranged	
	5	Steve Zanoth	1			
	6	Lisa Jolicoeur	2			
	7	Ryan Demars	3			
	8	Charles DeBuck	4			
	Resource Team	On-Call Dates	Schedule			
	1	Tooling	Location:	Paintline Conference Room		
	2	Maintenance	Start Date:	September 17		
	3		End Date:	September 21		
	4		Daily Start Time:	7:00 AM		
5		Daily Report Time:	3:00 PM			
6		Report Out Date / Time:	September 21			

- Establishes:
 - Event
 - Problem to be solved
 - Strategy tie in
 - What going to happen in the event
 - Metrics
 - Team
 - Schedule