

Step 3: Improve

Continuous Improvement

Simple steps toward better business...



- Understand approach
- Start Up
- Develop Scope / Profile
- Form Team
- Manage Effort

- Assess Value from the Customer's Perspective
- Map Process (Current State)
- Go see the work to deeply understand

- Identify Problems and Root Causes
- Identify Improvements
- Prioritize
- Design Future State

- Create Action Plan
- Plan, Do, Check, Adjust (PDCA)
- Manage Change

- Document Achievements
- Recognize Accomplishments
- Publicize Outcomes
- Continuously Improve

Step 3: Improve



- Identify Problems and Root Causes
- Identify Improvements
- Prioritize
- Design Future State

IDENTIFY PROBLEMS AND ROOT CAUSES

Problems and issues

- “Problems are gold” because identifying problems helps us make things better
 - If we don’t see it, we can’t fix it
- Stay with the problems; do not jump to solutions too early
- Add stickies with observations of problems on the current state map where they tie to the process

Identify waste

Waste: Problems...hurdles...obstacles...things that get in the way

OVERBURDEN – too much work

UNEVENNESS – some have too much, some too little

RESOURCE WASTE – Acronym “TIM U WOOD”

All get in the way of value



TIM U. WOOD: 8 Resource Wastes

Hi,
I'm Tim!



Transportation

Inventory

Motion

Under-utilization

Waiting

Over-processing

Overproduction

Defects

Transportation

Information and materials are moved without adding value to the customer

Example...

Copying data
from one
system to
another

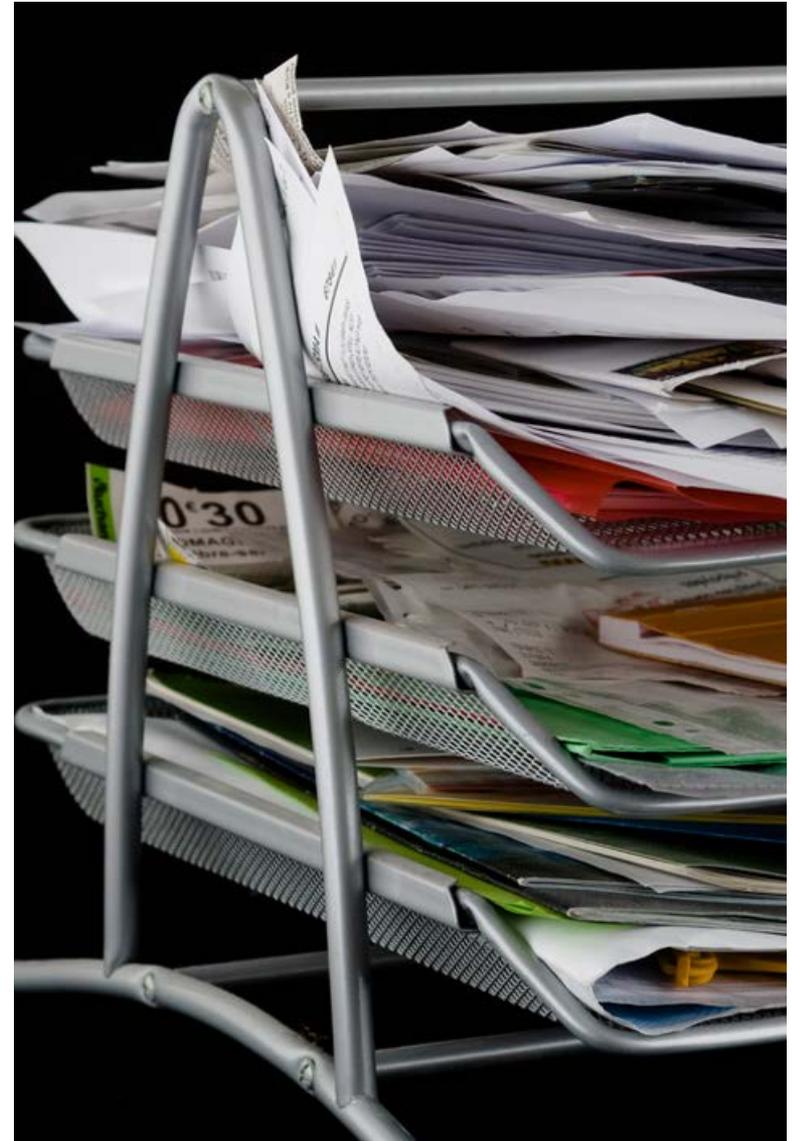


Inventory

Material/information the customer (or next process) is not ready for – inventory stacks up!

Examples...

Work waiting on desks, over-filled inboxes



Motion

Movement (of a person) that consumes time and energy while adding no value to the customer

Example...

Walking back and forth to the copy machine

Going to LHTS for meetings



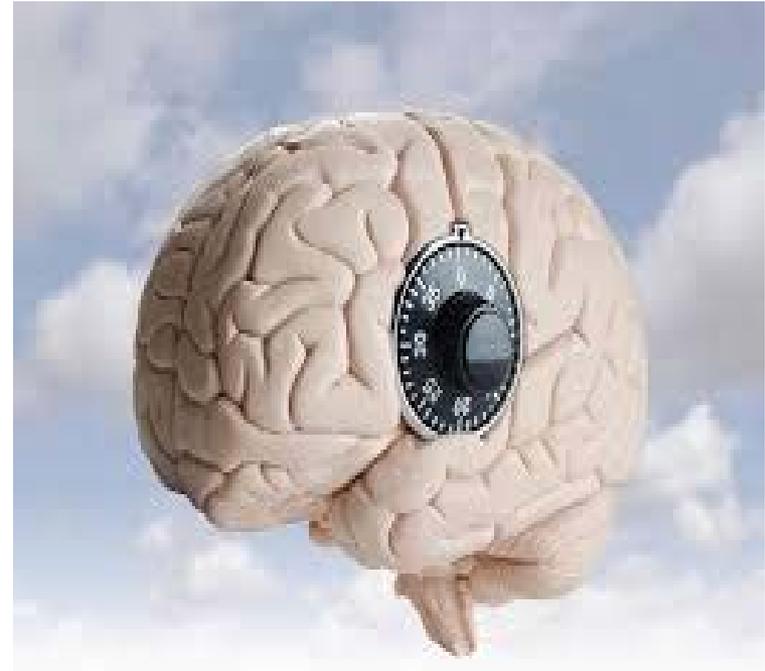
Unused Employee Creativity

Employees with improvement ideas are not encouraged / empowered to share them, causing missed opportunities for the entire organization

Example...

Employee input is neglected / ignored / discouraged

Employees' diverse skills are not fully utilized



Waiting

Resources (people, machines) are waiting but not adding value

Example...

Waiting for decisions...

Waiting for data...



Over-processing

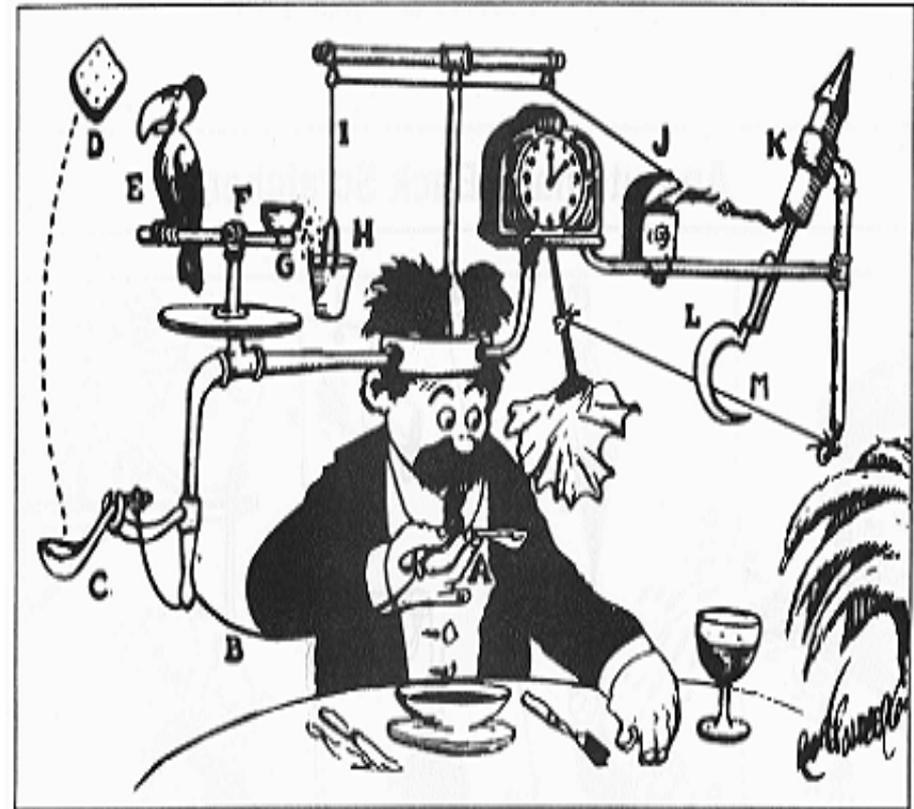
Doing more than the customer requires (more than what is valued)

Example...

Perfecting a budget when “good enough” will do

Over-complicating something

Self-Operating Napkin



Overproduction

Making more products, information or service than wanted by the customer

Example...

Manually creating reports that no one reads or needs

Tracking information that is not used



Defects/Rework

Creating items,
information or services,
which do not meet
customer specifications
and require rework

Examples ...

Errors in data

Incomplete information

Confusing form



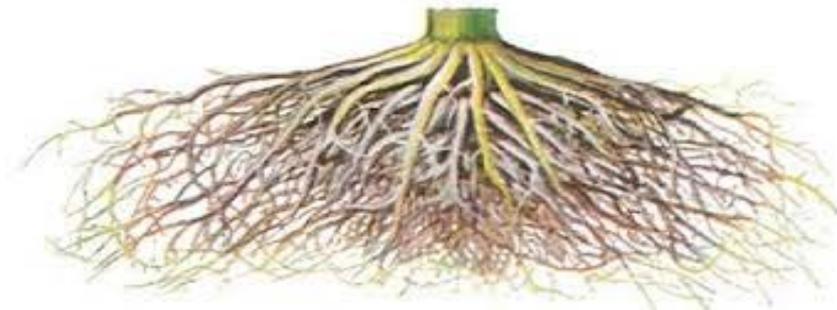
Identify Non-Value Add activities

Any activity that does not add value to the customer is considered non-value add or waste

- Could this activity be eliminated if some prior activity were done differently or correctly? If YES, then it is waste
- Could this activity be eliminated without impacting the form, fit, or function of the customer product? If YES, then it is waste
- Note that some waste may still be necessary to meet business requirements (e.g. compliance to required policy)

Determine root causes

- After mapping the current state process and reviewing for problems and waste, apply techniques to understand the true causes of problems
- This will inform how to resolve problems at the source and improve the overall process
- One technique is the “5 Whys” method for providing root cause insight



The 5 Whys

When using 5 Whys method, ask ...
... why?

Problem: There are
too many flat tires
on our trucks

Why?

The trucks are running over nails on the
floor

~~Cheap tires~~

Why? ↓

The nails are spilling out of some boxes

Why? ↓

The boxes have holes because they get
wet and deteriorate

Why? ↓

There is a hole in the roof

Why? ↓

The funds have not been approved to
fix the roof

**Know when
to STOP!**

Whyyy?!?



Root cause documentation

Example: The purchasing process is slow; approvals take too long

Issue	Root Cause	Category (<i>People, Process, Policy, Technology</i>)
Approvals take too long	Multiple forms; forms hard to find on web	Technology
Approvals take too long	Raj's approval limit of \$200 is too low	Policy
Purchasing delay if Mario or Jane is out	Mario/Jane roles are unnecessarily unique	People
Holly holds the forms until Friday to create a batch, causing a delay	Easier for Holly to send once per week	Process
Nancy takes too long to get to her forms	She gets too many to review, so she waits until she has time	Process

Summarize main pain points

- Step Back. Look at your map. Look at your analysis.
 - Where is there a lot of activity that is not important to the customer?
 - Where do you see significant waste (delays, rework, inventory, waiting)?
 - How big is the difference between cycle time and overall lead time?
 - Identify frequently repeated steps (count the number of reviews, inspections, signatures)
 - Are there places with excessive handoffs (e.g. lane changes in a swim lane diagram)?
 - Are there places where you see poor physical positioning of process participants?
- Circle a few areas on your map with the most pain points – these indicate potential areas for improvement

IDENTIFY IMPROVEMENTS

Brainstorm improvement ideas

- Establish an environment of possibility and creativity
 - Start with brainteasers or creativity exercises
 - Remind group of principles of brainstorming
 - There are no bad ideas at this stage
 - Don't criticize any ideas
 - Do build on other people's ideas
 - Don't linger on any one idea too long
 - Aim for quantity vs quality
 - Use parking lot to capture out-of-scope discussions and ideas
- Provide time to quietly reflect
- Brainstorm list of possible improvements
 - Participants write one idea per stickie
 - Participants put their ideas on the map one at a time and read aloud

Killer phrases to avoid when brainstorming improvements



We've never done it that way before

We don't have enough people

It's not in the budget

Policy prevents us from doing it

Sounds good, but...

It won't work with our business

If it's not broken don't fix it

These rules are for the idea generation stage; later when assessing idea feasibility these objections may be acceptable.

Ideas to consider when suggesting solutions

- Improve the process
 - Clarify handoffs: what's needed by whom, when, why
 - Reorder steps to be more logical
 - Ensure appropriate resources are available/used
 - Produce only what is needed
- Modify steps that could be
 - Combined or run concurrently
 - Eliminated altogether
 - Added earlier if they prevent rework later
- Standardize
 - Make faster via automation
 - Everyone agrees to do work the same way, consistently

Non-process issues may arise

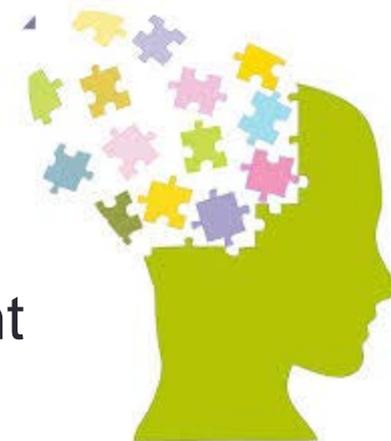
- Stay focused on process, but acknowledge that some non-process issues may arise
 - Should the organizational structure be changed to facilitate the process and customer value?
 - Is there opportunity to provide new products and services the customer cares about?
 - Can we leverage technology to better enable the process?
 - Is the culture healthy? Can we make changes to promote desired behavior?
- These items can be brought to the attention of the sponsor, but the focus of continuous improvement should be on tangible ways to improve the process

PRIORITIZE

Agree on how you will prioritize

- Identify who will make the decision about which improvements to pursue first
 - This could be the process owner or the team itself, depending on authority
- Establish criteria – the important elements that will drive the decision
 - Start with the goals on the charter – what were you originally trying to do?
 - Were any goals changed or added since the start of the project? These could be items identified from a better understanding of customer needs
 - **Examples:** reduces cost; adds value per customer; shortens cycle time; ease of implementation; number of people positively impacted; support by sponsor; contribution to mission

Narrow your brainstorm ideas



- Critically discuss brainstorm ideas and eliminate those that the team cannot reasonably implement
- There are several ways to narrow
 - Use N/3 voting to weed out:
 - Count the number of ideas; divide by 3
 - This is the number of votes each person has
 - Each person uses their votes for the items they want
 - A team member can put all votes in one place or give a few ideas only one vote
 - Impact / Difficulty matrix (also called a Cost / Benefit matrix)
 - Priority matrix (next page)
- Let the outcomes inform, but not rule, the discussion
- Finalize list of ideas, choosing those that are actionable and realistic

Priority Matrix

- Assign a value to each solution idea for how well it meets the criteria. For example:
 - 3 – High likelihood will meet all parts of criteria and have positive impact
 - 2 – Moderately meets criteria, but not as well as High
 - 1 – Low. Has potential for some impact successfully implemented
 - 0 or blank – Does not meet the criteria
- Analyze each improvement idea individually, then sum results
- Use the results to discuss
 - Quickly accept top contenders as “yes”; eliminate bottom as “no”
 - There will be a few where there is no obvious decision or agreement – focus majority of discussion on those

	Solution Ideas						
Criteria	A	B	C	D	E	F	G
Customer satisfaction	1	3		1		3	1
Reduce time	1	2	1	3	2		3
Reduce cost	1	2	1		3	1	1
<i>Total</i>	3	7	2	4	5	4	5

Recap all material

- Organize your documentation and analysis to prepare for discussion and decision
- Meet with decision makers
 - If it is simply your team, it is still advised that you recap story as described here
- Tell the story with your documents
 - The placement of colored stickies helps graphically tell the story
 - Describe the customers and the process (map)
 - Describe the problems (map)
 - Highlight the main pain points (map, root cause)
 - Add insights, descriptions of key discussions, questions
 - Present improvement recommendations
 - Describe the number of improvements, over what time, with specific people involved in implementation

List of improvement ideas

- Compile final top ideas in a list
- Clearly describe in simple terms, predicting benefits of each

Improvement	Description	Category (<i>People, Process, Policy, Technology</i>)	Benefit / Impact
Forms	Combine the 3 forms into 1 and put in one area on web site	System	Simplifies ordering
Increase delegation \$ amount	Change policy to increase approval delegation amount to \$500 for first line managers	Policy	Pushes responsibility to lower level; frees up senior manager time
Training	Define 'standard work' for Mario and Jane in Purchasing; cross train Mario and Jane so they can support each other's work	People	Standardizes process; backfills in cases of absence; no longer constrained by last name
Remove batch process	Bypass Holly's task and send forms directly to Purchasing as they get approved	Process	Removes the lengthy and non-value add wait time. Smooths the flow of forms to Purchasing

DESIGN FUTURE STATE

Design Future State

- Create a future state process map incorporating the approved improvements
 - Redraw the current state map (or parts of the map) to show revised steps, handoffs, technology interaction, decision points, roles
 - Dive in to areas needing more development; work through options and provide recommendations
 - In some cases, more than one alternative may be viable; document the options with data needed to make the choice later
- Add detail in specific areas to supplement map
 - Mock-up new form(s)
 - Describe suggested changes in roles (by unit or individual)
 - Draft policy change recommendation
 - Inventory data elements needed for technology (if appropriate)
 - Draft new standard procedures

Design Future State, continued

- Suggest improvement goals of the changes
 - Example *“decrease overall process time by 15 days”*
 - Use metrics from the current state process or recommend additional
 - Suggest where you want to be in 30/60/90 days with current resources
- Use Summary of Targeted Changes matrix
 - Revise and embellish recommended changes from earlier list
 - Add detail emerging from discussions
 - Add links for supplemental information (e.g. future state map, form mock-up document, roles & responsibilities list)

Get feedback on your design



- Talk with others about your map and documents and ask for feedback
- Preview roles and process changes with those who may be affected and ask for input
- If systems are involved, talk with IT personnel for input
- Designing the future state is an iterative process with increasing levels of detail added as you go