



ReedGroup LSS Yellow Belt

Yellow Belt Workshop

Agenda

Day 1	Day 2
Expectations of Training	Previous Days Recap
Introduction to Methodologies	Analyze
Customer Experience	Lean Concepts
Operational Definition Exercise	Charts
Define	Quick Improvement and Kaizen
Project Opportunity Document	Root Cause Analysis
SIPOC	Improve
Process Mapping	Brainstorming
Measure	Non-Value Add/Customer Value Add
Opportunity for Error	Cost of Poor Quality
Risk Analysis	Pilot
Activity Based Costing	Control
Data Collection	Control Plan
	Conclusion/Wrap Up

Expectations

1

Introduction to Lean Six Sigma/DMAIC

Learn the process improvement methodologies

2

Process Diagnostic Skills

Learn how to create process maps, analyze data, create visual representation of data, activity based costing

3

Agile Concepts

Learn how Agile fits into the Lean Six Sigma methodology

4

Initiative Management Skillsets

Learn skills to be able to lead a project or initiative

5

Ownership/Initiative Support

Learn how to gain support from sponsors and hold owners accountable for maintaining improvements

INTRODUCTION TO METHODOLOGIES

LEAN SIX SIGMA – TRAINING OFFERINGS

<u>Level of Training</u>	Yellow Belt	Green Belt	Black Belt
<u>Target Audience</u>	Project Team Members	Project Leaders	Process Improvement Specialists
<u>Outcome</u>	Fundamental understanding of Lean Six Sigma methodology	Ability Manage a process improvement project using the DMAIC (Define, Measure, Analyze, Improve, Control) methodology	Deals with complex problems with high benefit impact using statistical analysis
<u>Annually</u>	Yearly demonstration of where tool was used to maintain accreditation	Yearly demonstration of quantifiable gains in projects	Yearly demonstration of Lean Sigma based improvements, lead training and coaching
<u>Format</u>	Group / Classroom based 1.5 – 2 days	Coach directed study, 1:1 Mentoring with a Coach, and Classroom Targets certification within 6 months	Group / Classroom , 2-3 GB projects before BB, Mentoring with a Coach Targets certification 1- 1 ½ yr

LEAN, SIX SIGMA AND AGILE

Lean

LEAN

Speed + Low Cost

- Removes waste
- Fewer steps increases **Speed**
- Removes non-value added steps
- Focuses on the customer

Six Sigma

SIX SIGMA

Culture + Quality

- Reduces variation
- Fewer defects improves **Quality**
- Optimizes value added steps
- Focuses on the customer

Agile

AGILE

Quick and Frequent Delivery of Improvements

- Quicker cycles of learning deliver improvements
- Better risk mitigation
- Focuses on the customer

LEAN

Used by
Toyota to
create almost
no inventory!

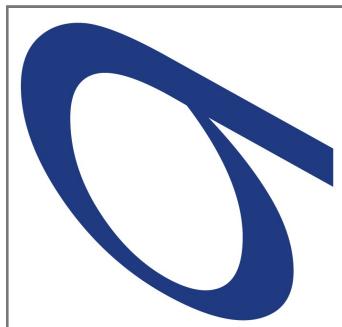
**Focus on
being flexible
to meet
customer
demand**



First used by
Ford in the
early 1900s!

Focus on
reducing /
eliminating
waste and
cost in
process

SIX SIGMA



Sigma is the Greek letter and a statistical unit of measurement that describes the variability or spread of data (the standard deviation of a population).

Six Sigma refers to a methodology of continuous improvement where the goal is to improve process performance to meet customers' requirements.



SIX SIGMA

3.4 defects per 1 million opportunities

	Process Capability in Sigma Values	Defects Per Million Opportunities (DPMO)	% Defect Free
1.5 misspelled words per sentence	2	308,537	69.1463
1.5 misspelled words per page	3	66,807	93.3193
1.5 misspelled words per chapter	4	6,210	99.3790
1.5 misspelled words in an encyclopedia set	5	233	99.9767
1.5 misspelled words in a small library	6	3.4	99.99966



Defect levels decrease exponentially as sigma levels increase!

SIX SIGMA

The 99% defect free equates to:



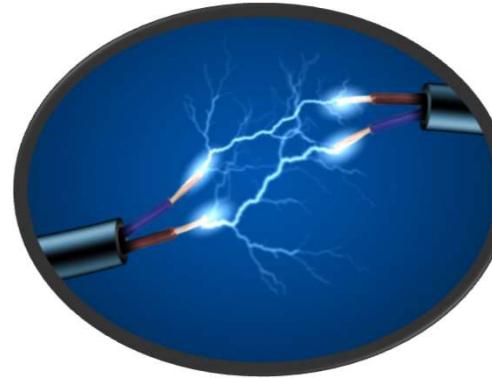
20,000 lost articles of mail
per hour



5,000 incorrect surgical
procedures in a week



2 short or long landings at most
major airports each day

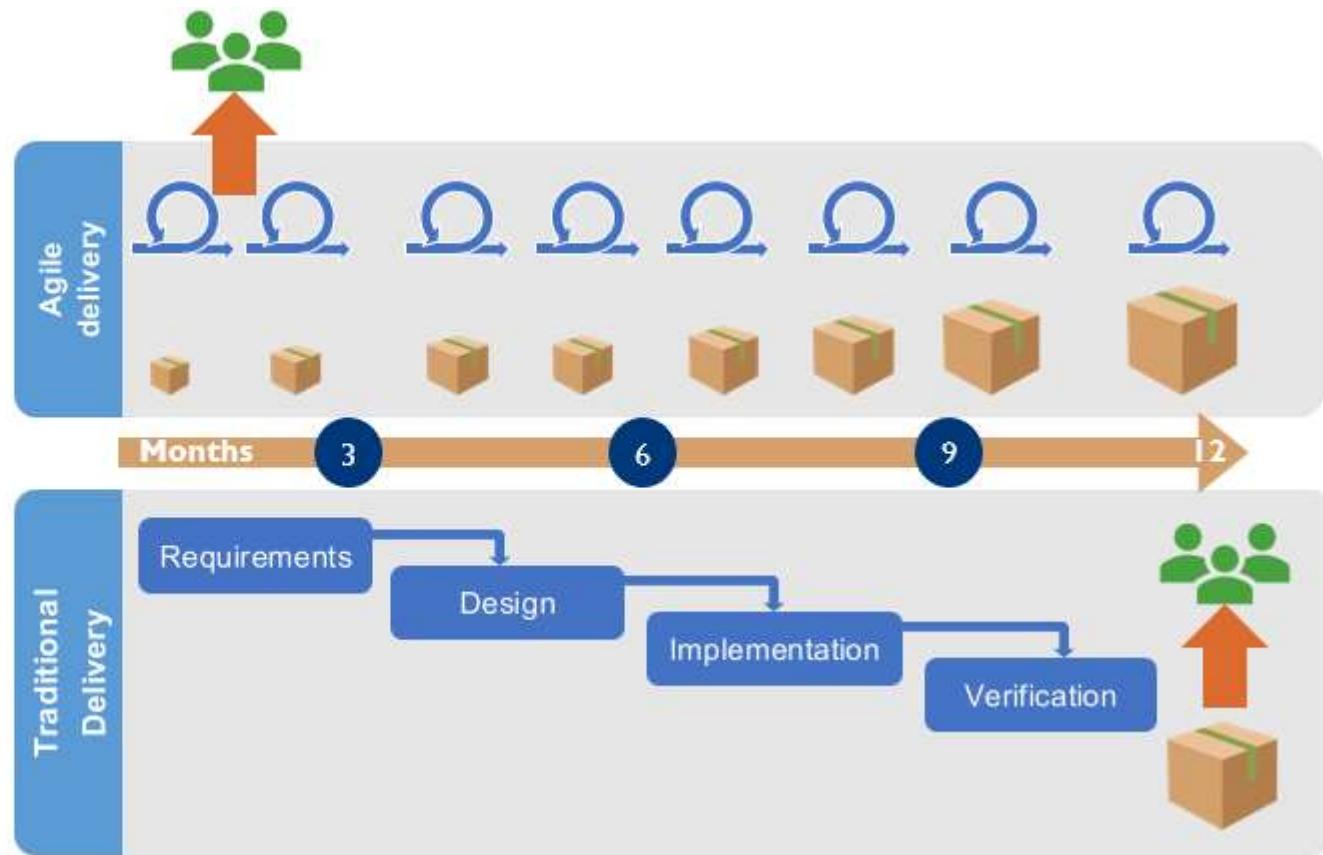


No electricity for almost 7 hours per
month

AGILE

Agile

- Focus on customer value
- Adjust to changes as we go
- Build in increments, informed by returns on investment
- Frequent and iterative delivery by dedicated team of owners



Traditional “Waterfall”

- Long cycles with few revisions to requirements
- ROI only seen after the “Big Bang” launch
- Diffused ownership and accountability for features

Key Scaled Agile Roles

 = key Business participants

Team



Program



Portfolio



CUSTOMER EXPERIENCE

VOICE OF THE CUSTOMER

What is Voice of Customer?

Voice of Customer is the expectations, preferences, comments, of a product or service from customers.

How is VOC captured?

Throughout the process or at timed intervals, you listen to the customer by:

- a) interviewing (i.e., individuals and focus groups,)
- b) surveying
- c) collecting to feedback (from individuals involved in the process)

VOC	NEED	REQUIREMENT
“I want the amount I requested”	Exact amount received to the correct account / address	Accuracy
“I want this to be easy”	Requests are easy to make	Ease
“I want my forms when you said I would have it”	Forms are <u>received as promised</u>	Timeliness



VOICE OF THE CUSTOMER

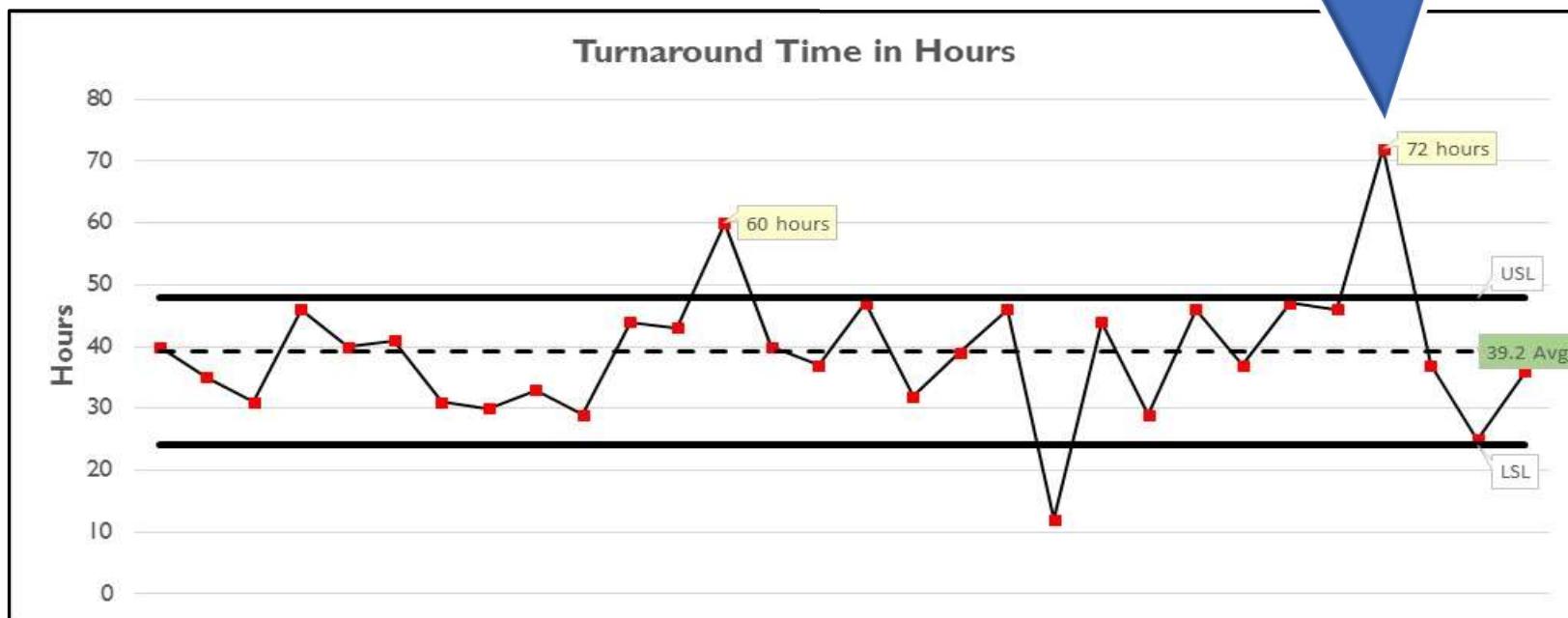
Impacts of not meeting expectations:

Satisfaction: ★★★★★

Timeliness: ★★★★★

“I have never received the forms I asked for over 2 days ago!! It's supposed to be 24-48 hours turn around...it's been longer than that”

Examine how the process is performing:

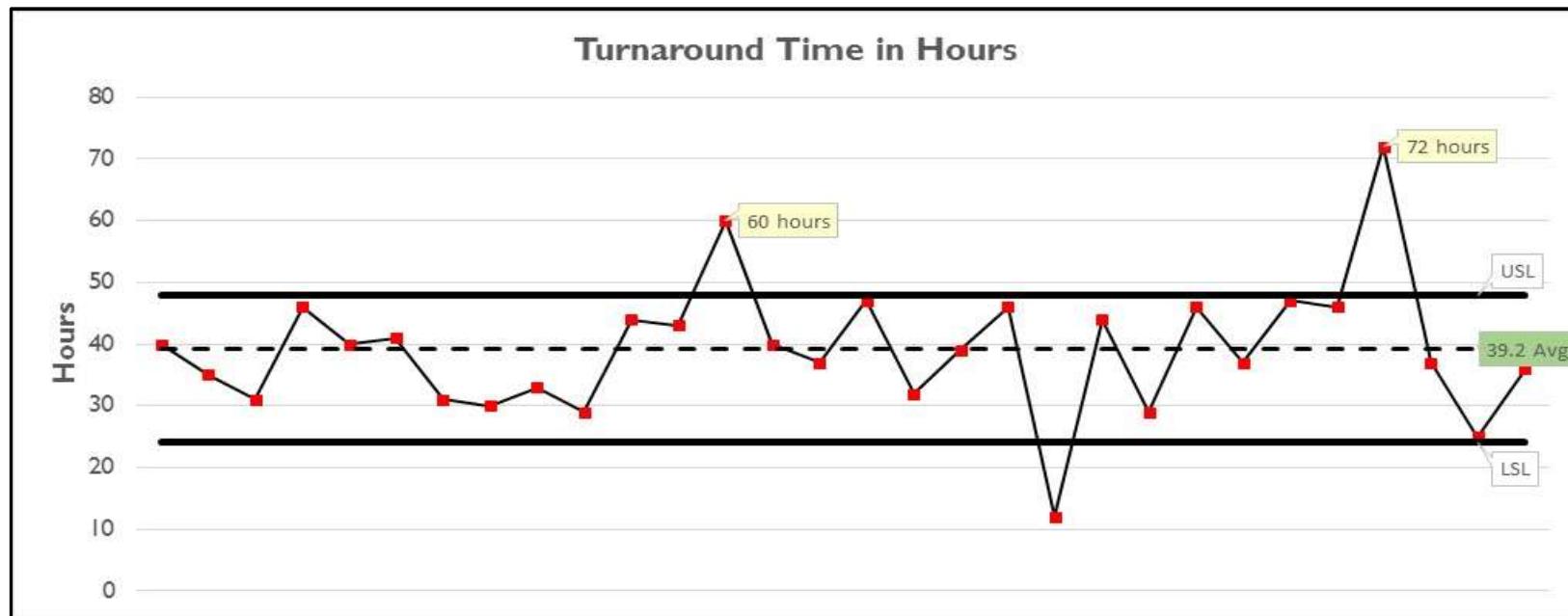


7% of the time customer expectations were not met

VOICE OF THE CUSTOMER

Impacts of not meeting expectations:

- 96% of unhappy customers don't complain
- 91% of those will simply leave and never come back.
- Unhappy customers start spreading negative word-of-mouth
- Dissatisfied customer will tell between 9-15 people; 13% tell more than 20 people

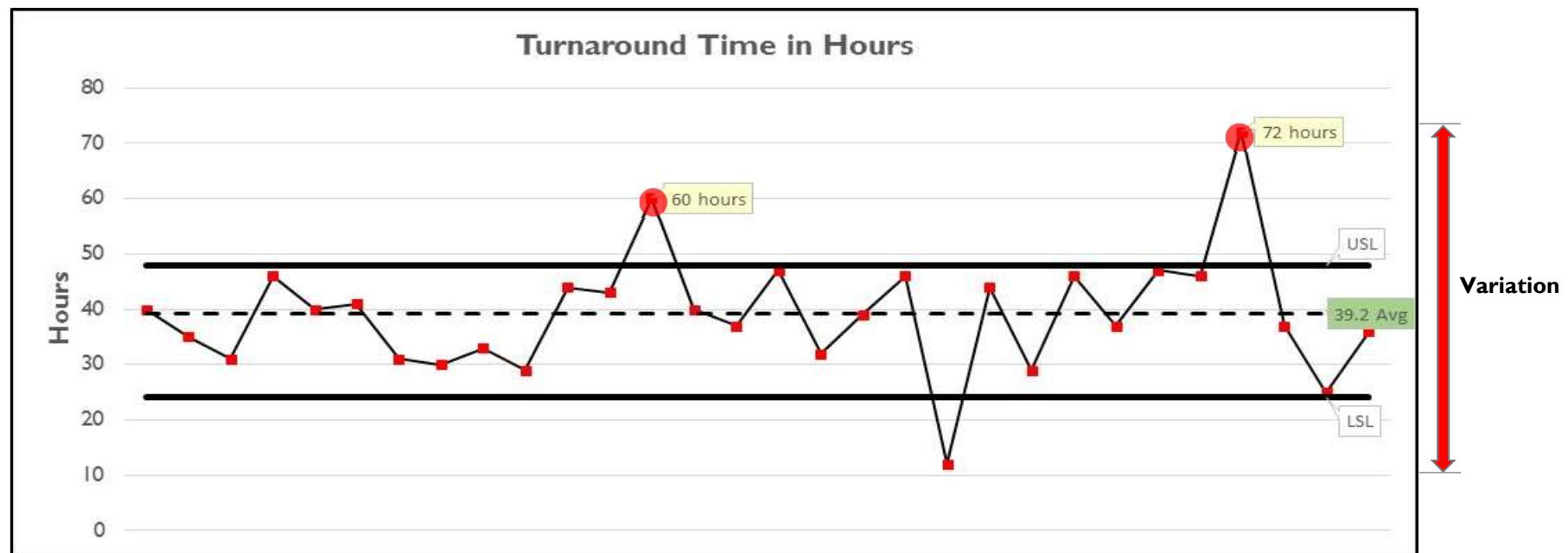


VOICE OF THE CUSTOMER

What does this mean from a Six Sigma aspect?

- Reduces variation
- Improves Quality → Eliminate Defects

Defects occur when you don't meet VOC / the expectations, preferences, comments, of a product or service from customers.



Customer Intent

We will deliver a Customer Experience that is...

Easy



Personalized



Emotionally Engaging



We will be...

- *easy to understand*
- *easy to interact with*

We will give our customers ...

- *options in the channels they prefer*
- *personalized information that is meaningful*
- *first name recognition*

Our customers will...

- *trust us*
- *feel valued*
- *feel cared for*

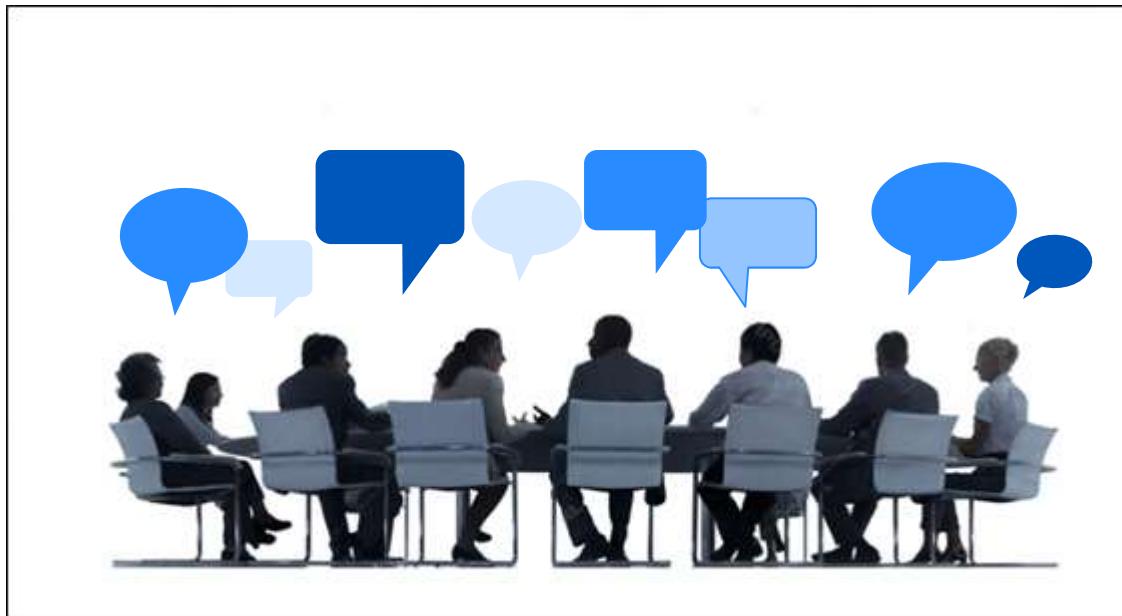
Definitions

Count the red cars...



DEFINITIONS

Definitions are critical to the success of a project.



As yellow belts, we don't want variation in processes, definitions, measures, analysis, etc.

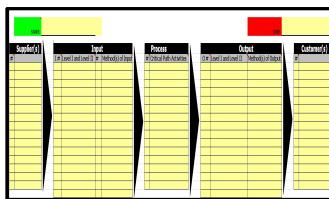
And variation, happens easily...

DMAIC

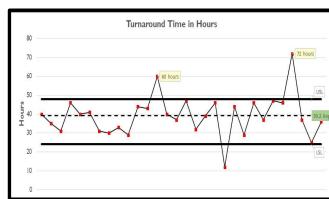
DEFINE

"I have never received the forms I asked for over 2 days ago!! It's supposed to be 24-48 hours turn around...it's been longer than that"

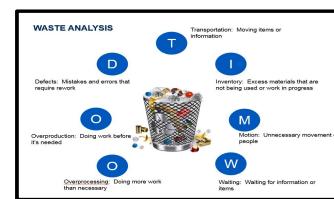
MEASURE



ANALYZE

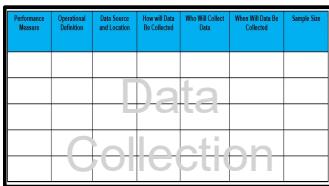
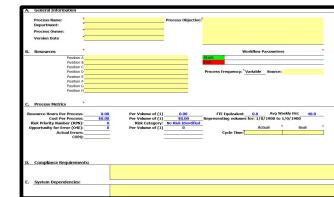
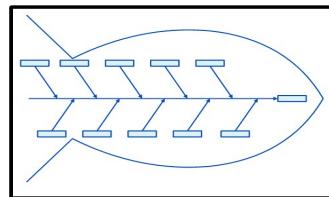
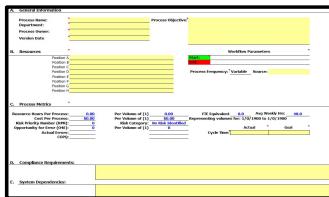
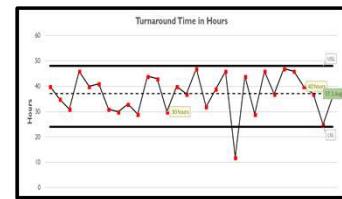
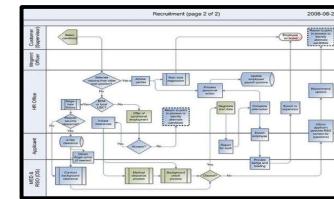
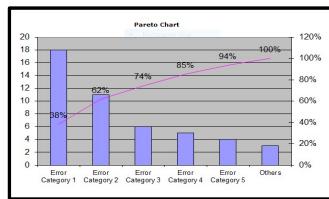
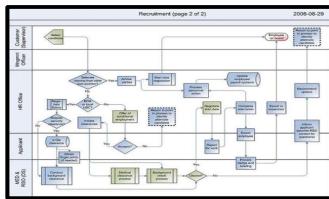


IMPROVE



CONTROL

....was very helpful! She emailed the form I needed very quickly and reassured me that she would assist me in completing it if needed.



BE LEAN



BE



LEAN SIX SIGMA PROJECT CHECKLIST



Project Activities:

- | | | | | |
|--|---|--|--|--|
| <input type="checkbox"/> Define the Project Opportunity
<input type="checkbox"/> Prioritize the Project
<input type="checkbox"/> Develop a Project Charter
<input type="checkbox"/> Develop a Project Plan
<input type="checkbox"/> Develop a Process Overview
<input type="checkbox"/> Understand the Customer(s)
<input type="checkbox"/> Create a Tollgate Presentation | <input type="checkbox"/> Define the Current State
<input type="checkbox"/> Develop Process Measures
<input type="checkbox"/> Data Collection / Sampling
<input type="checkbox"/> Validate the Data Quality
<input type="checkbox"/> Understand Process Variation
<input type="checkbox"/> Process Capability Analysis
<input type="checkbox"/> Create a Tollgate Presentation | <input type="checkbox"/> Analyze the Process
<input type="checkbox"/> Identify Root Causes
<input type="checkbox"/> Explore Cause and Effects
<input type="checkbox"/> Develop and Test Hypothesis
<input type="checkbox"/> Verify Analysis with Data
<input type="checkbox"/> Define Quick Wins
<input type="checkbox"/> Create a Tollgate Presentation | <input type="checkbox"/> Generate Potential Solutions
<input type="checkbox"/> Develop a Future State
<input type="checkbox"/> Assess the Risks
<input type="checkbox"/> Select and Pilot Solutions
<input type="checkbox"/> Create SOP & Provide Training
<input type="checkbox"/> Develop a Control Plan
<input type="checkbox"/> Develop a Process Dashboard
<input type="checkbox"/> Implement the Solutions
<input type="checkbox"/> Create a Tollgate Presentation | <input type="checkbox"/> Implement Process Controls
<input type="checkbox"/> Standardize the Solutions
<input type="checkbox"/> Quantify the Improvements
<input type="checkbox"/> Develop a Project Storyboard
<input type="checkbox"/> Obtain Project Signoff
<input type="checkbox"/> Close the Project
<input type="checkbox"/> Create a Tollgate Presentation |
|--|---|--|--|--|

Project Tools:

- | | | | | |
|--|--|--|--|---|
| <input type="checkbox"/> Project Checklist
<input checked="" type="checkbox"/> Project Opportunity Document
<input type="checkbox"/> Benefit Effort Analysis
<input type="checkbox"/> Stakeholder Analysis
<input type="checkbox"/> Communication Plan
<input type="checkbox"/> RACI Matrix
<input type="checkbox"/> Project Plan
<input checked="" type="checkbox"/> SIPOC
<input checked="" type="checkbox"/> VOC / VOB <ul style="list-style-type: none"> □ Kano Analysis □ CTQ Tree <input type="checkbox"/> Define Tollgate Presentation | <input type="checkbox"/> Current State Process Map
<input checked="" type="checkbox"/> Current State FMEA
<input checked="" type="checkbox"/> Data Collection Plan
<input type="checkbox"/> Data Collection Activities <ul style="list-style-type: none"> □ Pareto Chart □ Control Chart □ Run Chart □ Histogram <input type="checkbox"/> Measurement System Analysis <ul style="list-style-type: none"> □ Gage R&R □ Attribute Agreement Analysis <input type="checkbox"/> Process Capability & Variation <ul style="list-style-type: none"> □ Process Capability Analysis □ FMEA □ Process Sigma <input type="checkbox"/> Measure Tollgate Presentation | <input type="checkbox"/> Brainstorming Session <ul style="list-style-type: none"> □ Affinity Diagram □ Cause Effect Diagram □ Force Field Analysis <input checked="" type="checkbox"/> 5 Why Analysis
<input checked="" type="checkbox"/> 7 Wastes Analysis
<input type="checkbox"/> Spaghetti Diagram
<input checked="" type="checkbox"/> COPQ Analysis
<input type="checkbox"/> Statistical Analysis <ul style="list-style-type: none"> □ Scatter Plot □ ANOVA □ Regression Analysis □ Takt Time Analysis □ Design of Experiments <input type="checkbox"/> Analyze Tollgate Presentation | <input type="checkbox"/> Future State Process Map <ul style="list-style-type: none"> □ PokaYoke <input checked="" type="checkbox"/> Kaizen Event
<input checked="" type="checkbox"/> 5S Method
<input checked="" type="checkbox"/> Control Plan <ul style="list-style-type: none"> □ Include QC, if applicable <input type="checkbox"/> Process Dashboard <ul style="list-style-type: none"> □ Control Chart □ Run Chart □ Histogram □ Process Capability Analysis □ Process Sigma <input type="checkbox"/> Improve Tollgate Presentation | <input checked="" type="checkbox"/> SOP
<input type="checkbox"/> Project Storyboard
<input type="checkbox"/> Control Tollgate Presentation |
|--|--|--|--|---|

Gate Review Topics:

- | | | | | |
|---|---|--|--|--|
| <input type="checkbox"/> Project Importance
<input type="checkbox"/> Business Goals
<input type="checkbox"/> Business Success Measures
<input type="checkbox"/> Project Team
<input type="checkbox"/> Project Assumptions
<input type="checkbox"/> SIPOC
<input type="checkbox"/> Current Process Yield
<input type="checkbox"/> Customer Requirements
<input type="checkbox"/> Business Requirements | <input type="checkbox"/> Process Pain Points
<input type="checkbox"/> Process Measures
<input type="checkbox"/> Measurement System Effectiveness
<input type="checkbox"/> Process / Data Patterns
<input type="checkbox"/> Process Capability
<input type="checkbox"/> Process Sigma | <input type="checkbox"/> Root Causes
<input type="checkbox"/> Process Variations
<input type="checkbox"/> Data Analyzed
<input type="checkbox"/> Data Analysis Overview | <input type="checkbox"/> Future State Strategy
<input type="checkbox"/> Solution Identified
<input type="checkbox"/> Solution Evaluation
<input type="checkbox"/> Testing Strategy
<input type="checkbox"/> Implementation Effectiveness
<input type="checkbox"/> Process Sigma
<input type="checkbox"/> Lessons Learned | <input type="checkbox"/> Solution Effectiveness
<input type="checkbox"/> Process Control Metrics
<input type="checkbox"/> Process Control Plan
<input type="checkbox"/> Process Sigma
<input type="checkbox"/> Project Accomplishments
<input type="checkbox"/> Project Financial Results
<input type="checkbox"/> Lessons Learned |
|---|---|--|--|--|

DEFINE

INTRODUCTION TO DEFINE

Purpose of Define Phase

- Identify that a Problem exists
- Complete high-level Project Opportunity to determine Scope
- Understand the Business and Customer's needs and requirements



OPPORTUNITY STATEMENT

Problem / Opportunity Statement	Business Impact
<ul style="list-style-type: none">▪ What is not working?▪ What are the “pain points” for Guardian Staff and Leaders?▪ What pain are our customers experiencing?▪ What opportunities exist for improvement?	<ul style="list-style-type: none">▪ What is the Benefits Realization validated impact on the problem?▪ What is the expected impact on the project goals?▪ What is the overall benefit/effort? (hard/soft benefits, revenue enhancement, cost avoidance)
Objective / Deliverables	Project Scope
<ul style="list-style-type: none">▪ What are our improvement goals and targets?▪ A concise statement that describes the overall improvement impact to strategic goals and/or enterprise business goals?	<ul style="list-style-type: none">▪ Line of Business focused?▪ Are there other “initiatives” currently underway or proposed that relate to this project?▪ What components or processes of the business are included / not included?▪ Is anything outside project boundaries? LIST IN-SCOPE, OUT-SCOPE, as needed
Project Team, Timing & Resource Expectations	Project Risk Assessment
<ul style="list-style-type: none">▪ Business Project Sponsor: name▪ Business Project Owner: name▪ Business Project Manager: name▪ Master/Black Belt: name▪ Target Start Date:▪ Expected End Date:▪ What additional part-time SME's will be required?	<ul style="list-style-type: none">▪ Describe any major project risks (intent/alignment, people, delivery or existing financial controls) that may affect successful project completion. Include any information you may have around probability or likelihood of the risks occurring.

Sample Project Opportunity

Problem / Opportunity Statement

- From February 2013 thru February 2014, 163 production defects were reported in RAPID with a total cost of \$512,539:
 - IT resource cost of \$398K as a result of investigation and resolution.
 - BTL resource cost of \$87K
 - Business resource cost of \$27K
- We do not have the capability to quantify how the production defects affect the customer satisfaction as well as the gain/loss implications.
- From February 2013 thru February 2014, 339 tickets were logged in ClearQuest during Development/SIT/UAT/Post Implementation.
 - SIT Costs – \$58K
 - UAT Costs – \$15K

Business Impact*				
Measure	Baseline (KTLO/ME) (751)	Baseline (Projects) (13)	After KTLO/ME	After Projects
Process Hours	67-per UW 50,279-annually	531-per UW 6,903-annually	63-per UW 47,313-annually	490-per UW 6,377-annually
Process Cost	\$2,420-per UW \$1.8 M-annually	\$18,327-per UW \$239K-annually	\$2,246-per UW \$1.7 M-annually	\$16,791.42-per UW \$218K-annually
Risk Priority Number	1,613	1,613	443	443
O4E	287	287	275	275
# of Defects	Pre-Production: 334 Post Production: 163		Pre-Production: 658 Post Production: 116	

Objective / Deliverables

- Primary:** Reduce the number of issues occurring in the production environment.
- Secondary:** Reduce the opportunity for errors moving into the production environment by improving the quality of requirements, development and testing.

Scope

- Transcend and its interfaces
- Process to begin upon business requirements completion through post implementation

Risk Assessment

- Process changes need to be owned and sustainable
- Project prioritization and prioritization of resources
- Limitation on updating changes in RAPID

Project Team, Timing, Resources

- Project Sponsor: Michael Hicks; Kimberly Delaney
- Project/Process Owner: Rita Brew; Louise Heckman; Raj Jwaleshan; Gloria Hopfensperger
- Green Belts: Lori Rogora; Rita Brew; Louise Heckman; Chris Engler
- Yellow Belts: Patrice Martin; Henry Pinto
- Black Belt Candidate: Tracey Lutz
- Black Belt / Master Black Belt: George Hardy / Glen Popolo
- Target Start Date: 12/2013
- Expected End Date: Q2 2015

DEFINING THE BUSINESS PROBLEM

Problem / Opportunity Statement

- What is not working?
- What are the “pain points” for Guardian Staff and Leaders?
- What pain are our customers experiencing?
- What opportunities exist for improvement?

- Before beginning an initiative, it is important to clearly identify the business problem
- Business problem can be defined from a financial, organizational, process, technology or people perspective
- Business problems typically relate to quality, customer satisfaction, productivity, cycle times and expense concerns
- A clearly defined business problem will enable you to more effectively resolve the business issue as well as creating a “sense of urgency”. Management will better understand the importance of allocating resources to resolve the business issue.

PERCEIVED BUSINESS PROBLEMS ARE OFTEN SYMPTOMS

- Frustrated internal customers
- Cycle times are increasing although staffing has increased
- High turnover of employees
- Department is perceived as not being proactive in identifying and resolving problems
- No performance measures exist to track department performance
- Customer satisfaction is declining
- Training is not provided for staff
- Quality scores are consistently decreasing
- Low morale throughout the area

Root Cause Analysis is a popular technique which seeks to identify the origin of a problem (using specific steps and tools) to find the primary cause of the problem, so that you can:

- Determine what happened.
- Determine why it happened.
- Figure out what to do to reduce the likelihood that it will happen again.

You'll usually find three basic types of causes:

1. **Physical causes** – Tangible, material items failed in some way (for example, a car's brakes stopped working).
2. **Human causes** – People did something wrong, or did not do something that was needed. Human causes typically lead to physical causes (for example, no one filled the brake fluid, which led to the brakes failing).
3. **Organizational causes** – A system, process, or policy that people use to make decisions or do their work is faulty (for example, no one person was responsible for vehicle maintenance, and everyone assumed someone else had filled the brake fluid).

DEFINING OBJECTIVES

Objective / Deliverables
<ul style="list-style-type: none">▪ What are our improvement goals and targets?▪ A concise statement that describes the overall improvement impact to strategic goals and/or enterprise business goals?

- The initiative's objectives, or outcomes from your work, will be viewed by management **as the benefit that will be realized** once the initiative has been completed
- Properly defined objectives will keep the Team focused on specific goals
- Examples of Objectives are:
 - Quantify the amount of time associates spend performing key business processes to determine if resources are being effectively utilized
 - Identify potential Tips relative to processes, organization, people, technology, etc. to improve the efficiency and effectiveness to the department
 - Identify standards, minimum submission requirements, etc. to improve communications and enhance workflows
 - Reduce business process cycle times by eliminating redundant or non-value added activities

DEFINING SCOPE

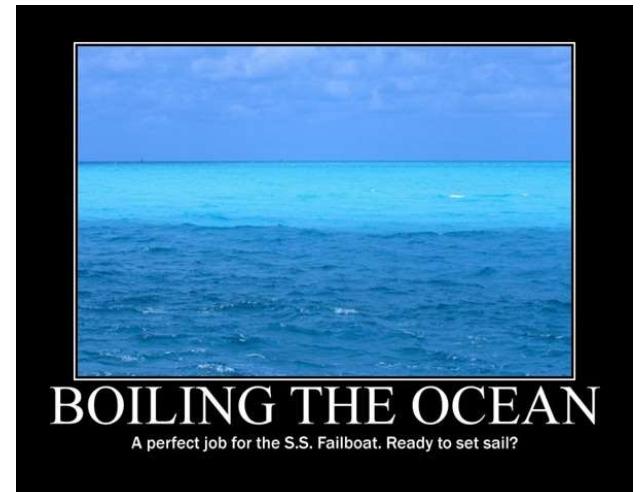
Project Scope

- Line of Business focused?
- Are there other “initiatives” currently underway or proposed that relate to this project?
- What components or processes of the business are included / not included?
- Is anything outside project boundaries? LIST IN-SCOPE, OUT-SCOPE, as needed

- Once you have defined the business problem, the next step is to define the initiative’s scope
- The term “scope” relates to the focus of your initiative
- Scope can be as broad as reviewing the activities performed within a Guardian Business Unit, or as limited as focusing on a specific process (e.g., commissions)

You need to understand and “limit” scope to ensure:

- Allocation of scarce resources (time, money, people)
- Progress toward our goals
- Satisfied customers



DEFINING BENEFITS / IMPACTS

- The Benefits Realization Card is used to select the benefit metrics applicable to the initiative.
- The key concept behind a standard set of metrics is to:
 - Commonly use them across all Profit/Support Centers during benefits realization estimating, validation and reporting activities
 - Improve Project Scoping discussions by quickly identifying common metrics to better drive actions and decisions

Benefit	Metric/Goal	Detailed Metrics	
Hard Benefits	Cost Savings	Personnel Expense (PE) <ol style="list-style-type: none"> 1. Staff reduction 2. Overtime reduction (Non-exempts) 3. Temp reduction 4. Consultant reduction 	Non-Personnel Expense (NPE) <ol style="list-style-type: none"> 1. Vendor Costs / Regulatory Fees 2. Office Supplies 3. Training 4. Travel 5. Postage, Printing and Expressage
Revenue Enhancement	Find, Win, Keep Customers	<ol style="list-style-type: none"> 1. Premium increase / Average policy amount increase 2. Payment increase 3. Average Face Amount increase 4. Placement Rate increase 5. Policy Count increase 6. Product, Channel or Initiative-Specific increase 7. Persistency/retention of business sustained 	
Cost Avoidance	Future Avoided Costs	<ol style="list-style-type: none"> 1. Future budget increases avoidance (PE/NPE) 2. Defects cost reduction 3. Legal and risk mitigation fees avoidance (may not be quantified) 4. Hardware maintenance reduction 5. Software maintenance reduction 6. Telecommunications infrastructure reduction 7. Contract fees reduction 	
Soft Benefits	Ease of Doing Business / Customer Satisfaction	<ol style="list-style-type: none"> 1. Voice of the Customer Surveys 2. Direct Customer Feedback 3. Complaints reduction 4. Overtime reduction (Exempt associates) 5. Capacity increase / % - Process cycle time reduction 6. Staff repurposing 	
	Quality	<ol style="list-style-type: none"> 1. Error reduction 2. Opportunities for error 	
	Risk	<ol style="list-style-type: none"> 1. Severity, occurrence and detection based on internal or external ratings 2. Avoidance or mitigation of exposure to risk 3. Compliance 	

FORMING TEAMS



"To improve our teamwork, only three of the chutes will open."

Characteristics of High-performing Teams

- Share a sense of common purpose
- Make effective use of individual talents and expertise
- Have balanced and shared roles
- Maintain a problem solving focus
- Schedule work to be done and **commit to taking time allotted to do work**
- **Keep team members regularly informed** on how the overall project is going
- Develop tangible work products for which they are mutually accountable
- Accept differences of opinion and expression. Problems are discussed and resolved by the team
- Encourage risk taking and creativity

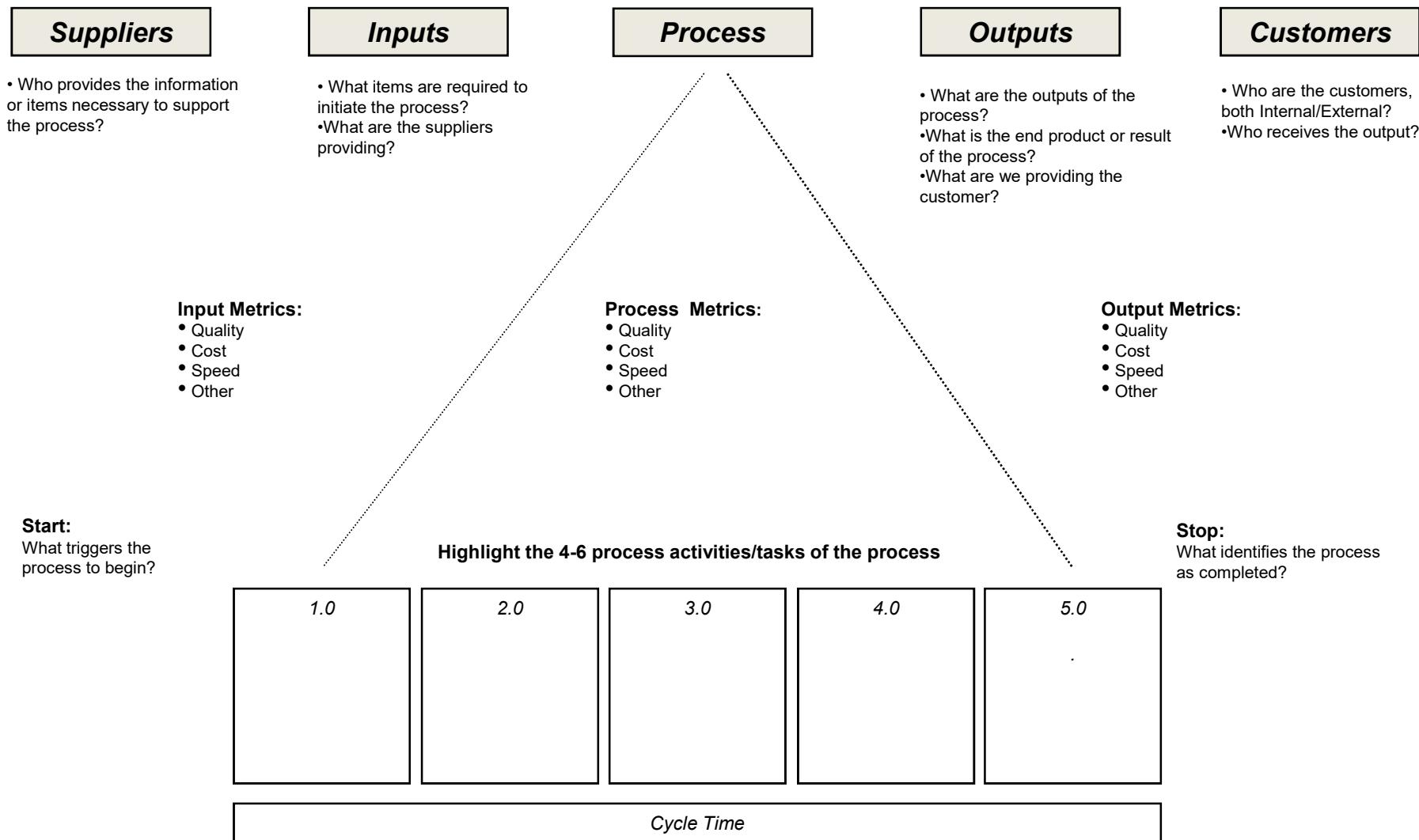
GROUP EXCERCISE

Develop a PO to reduce missing information on APS forms

PROCESS MAPPING

Map Type	Description	When to use
<u>SIPOC</u>	High level map listing Suppliers, Inputs, Process, Outputs, and Customer	Used in the Define phase of every project to scope the boundaries of the process and identify major suppliers and customers, their inputs and outputs.
<u>Top Down</u>	Used to drill down from a high to a low level (detailed) process map	Provides focus by selectively expanding from the highest level down to the level where the root cause is located. Top-Down Chart is to determine the correct level of the process to Value Stream Map
<u>Value Stream Map</u>	A process map with details added that are meaningful to the project	Value Stream Maps are a valuable tool for root cause analysis. The appropriate level of detail will indicate the steps in the process that need the most attention for improvement activities.
<u>Swim Lane</u>	A flowchart which separates functional areas or individuals into "lanes".	Multiple departments/functions are involved, including outside the firm. Sequence and time of processes is important (as in cycle time reduction).

SIPOC



GROUP EXERCISE

Develop a SIPOC for pizza order fulfillment, end to end process.

Start of process: Customer calls pizzeria to place order.

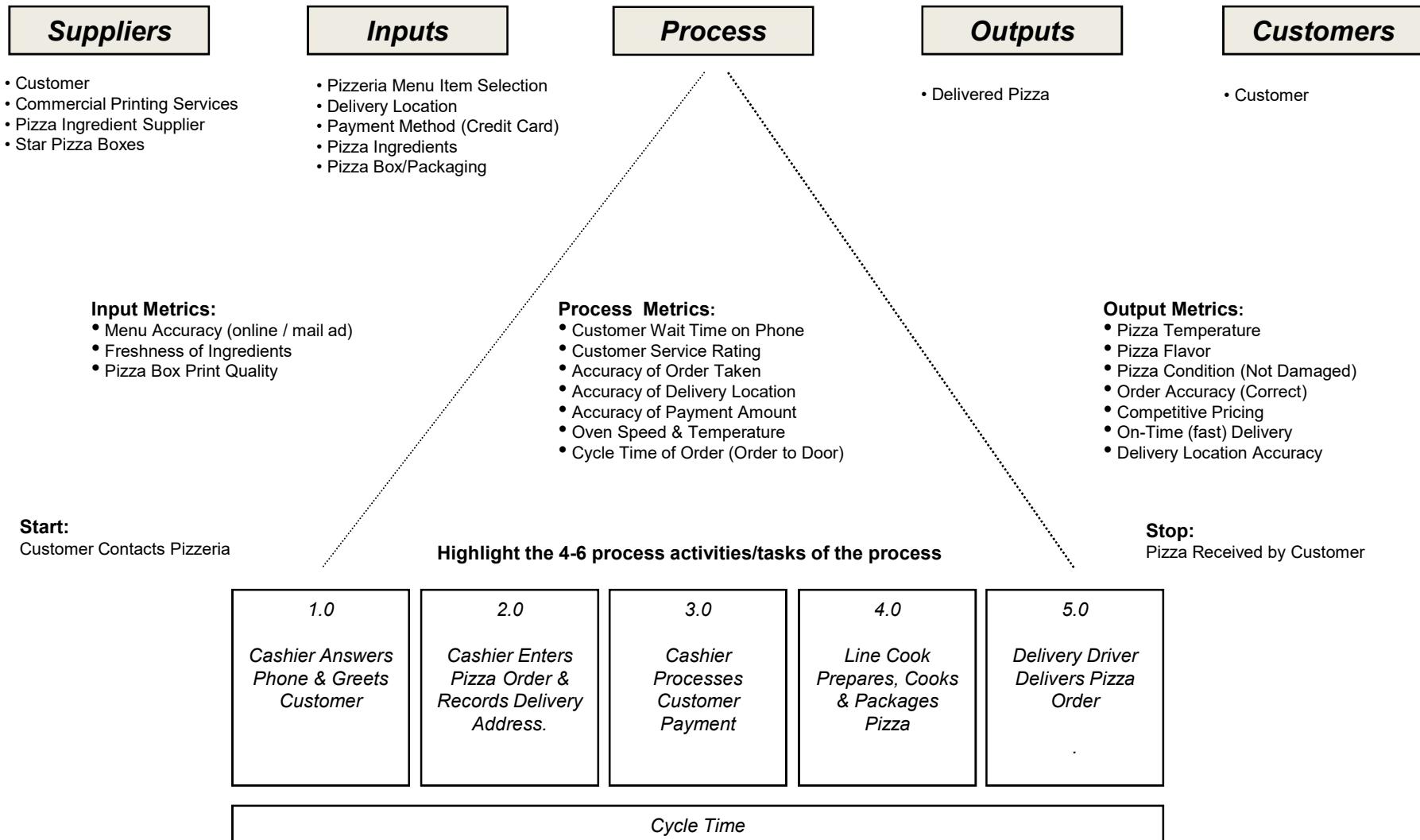
Stop process: Pizza is delivered to customer location.

1. What is the process at a high level?
2. What are the outputs and customers?
3. What are the inputs and suppliers?

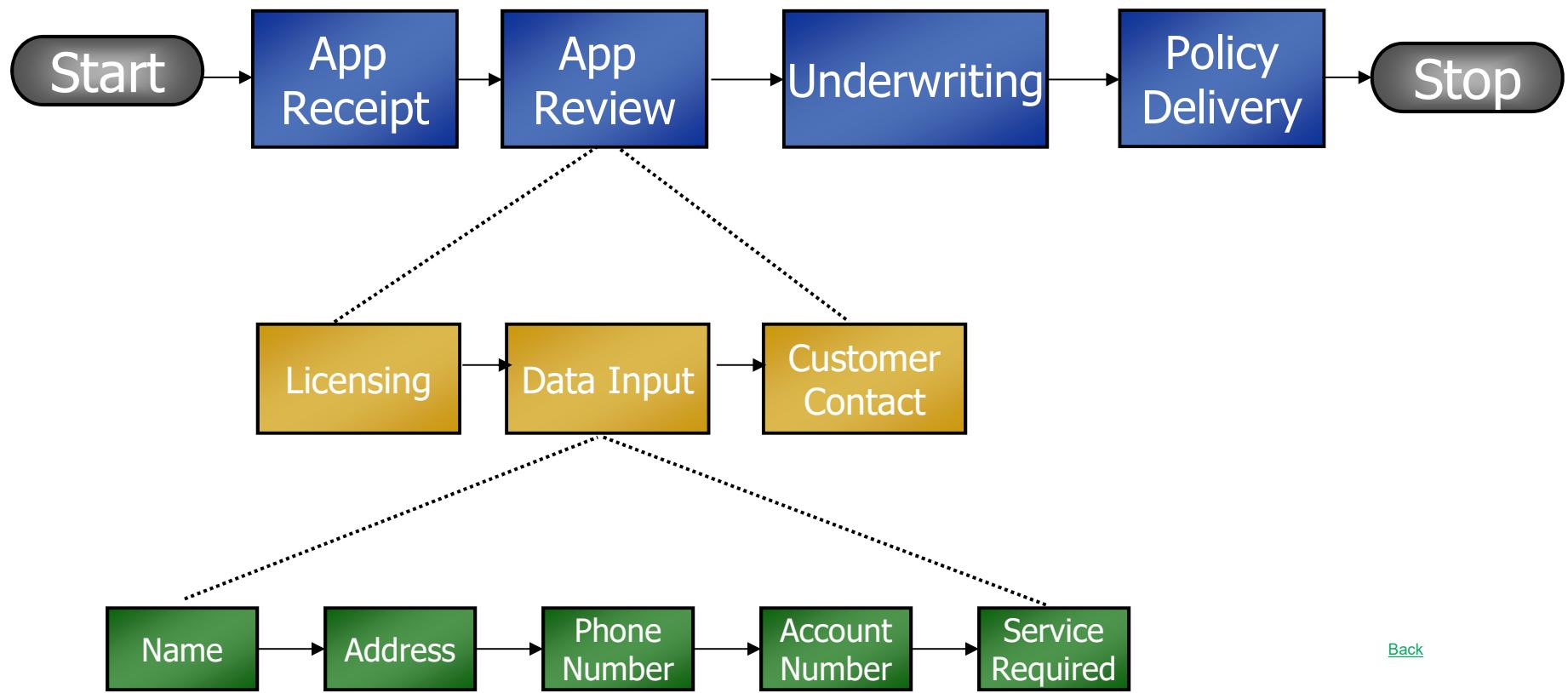
Note: Teams to create SIPOC on white board.

30 Minutes

GROUP EXERCISE

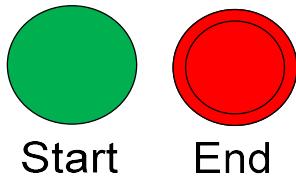


PROCESS MAPPING – TOP DOWN MAP

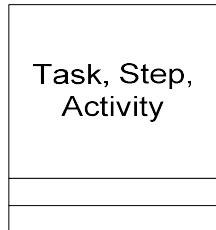


[Back](#)

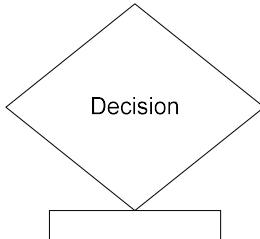
PROCESS MAPPING – HOW TO MAP



Start/End - The process should begin with a circle with the word “Start” and finish with one or more circles with the word “End”.



Activity - An action or set of tasks being completed within the process map (represented by a rectangle).



Decision - A step in the process where a yes-no question is asked to determine the processing next steps (represented by a diamond).



Connectors – Connectors (aka page connectors) indicate the process resumes at the connector point on the same page or other process map page.

PROCESS MAPPING – HOW TO MAP

- **Line Arrows** – The arrow shows the direction the work is flowing. Line arrows crossing work streams indicate hand-offs or interaction between positions.
- **Dotted Lines** – Shows the direction of alternate process or information flow.



Swim Lane - Also known as “Work stream”. The horizontal section of the process relating to a position, department, vendor, customer, or system.



Delay – Shows delays within the process flow.



Database – Highlights databases within process flow.



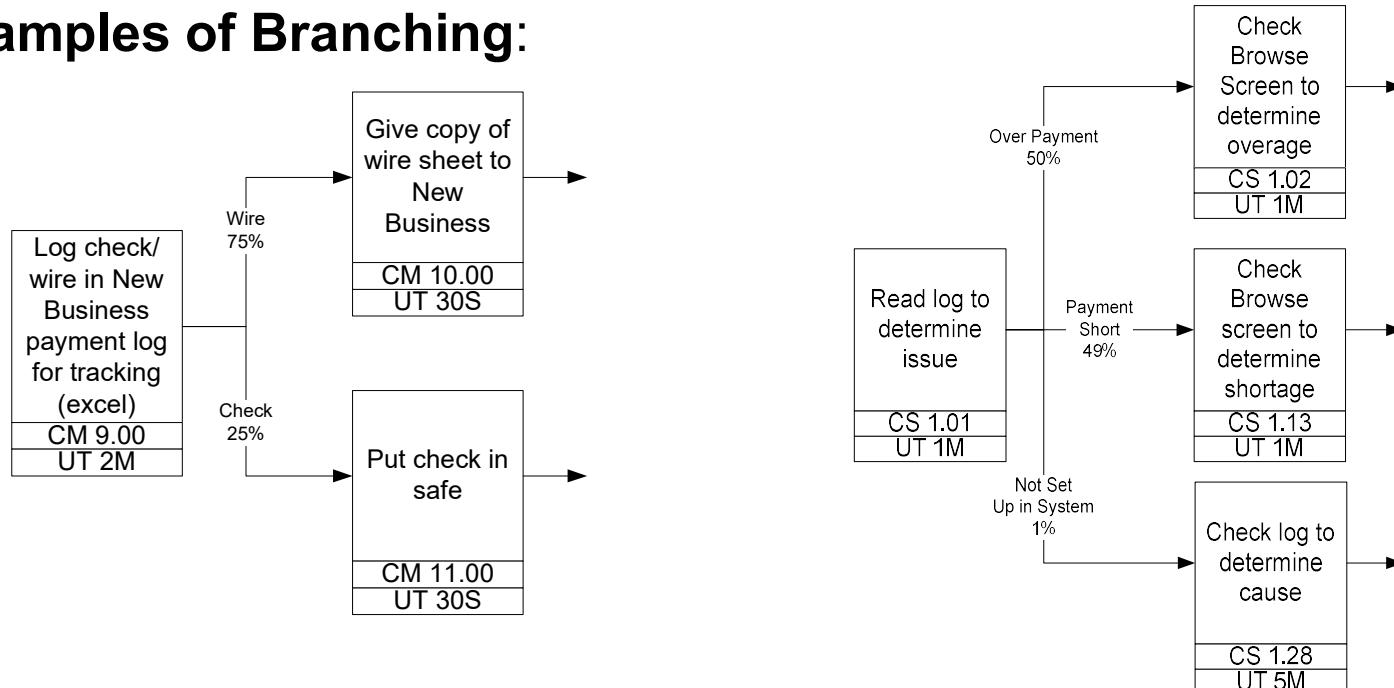
Document

Document – Highlights documents within the process flow.

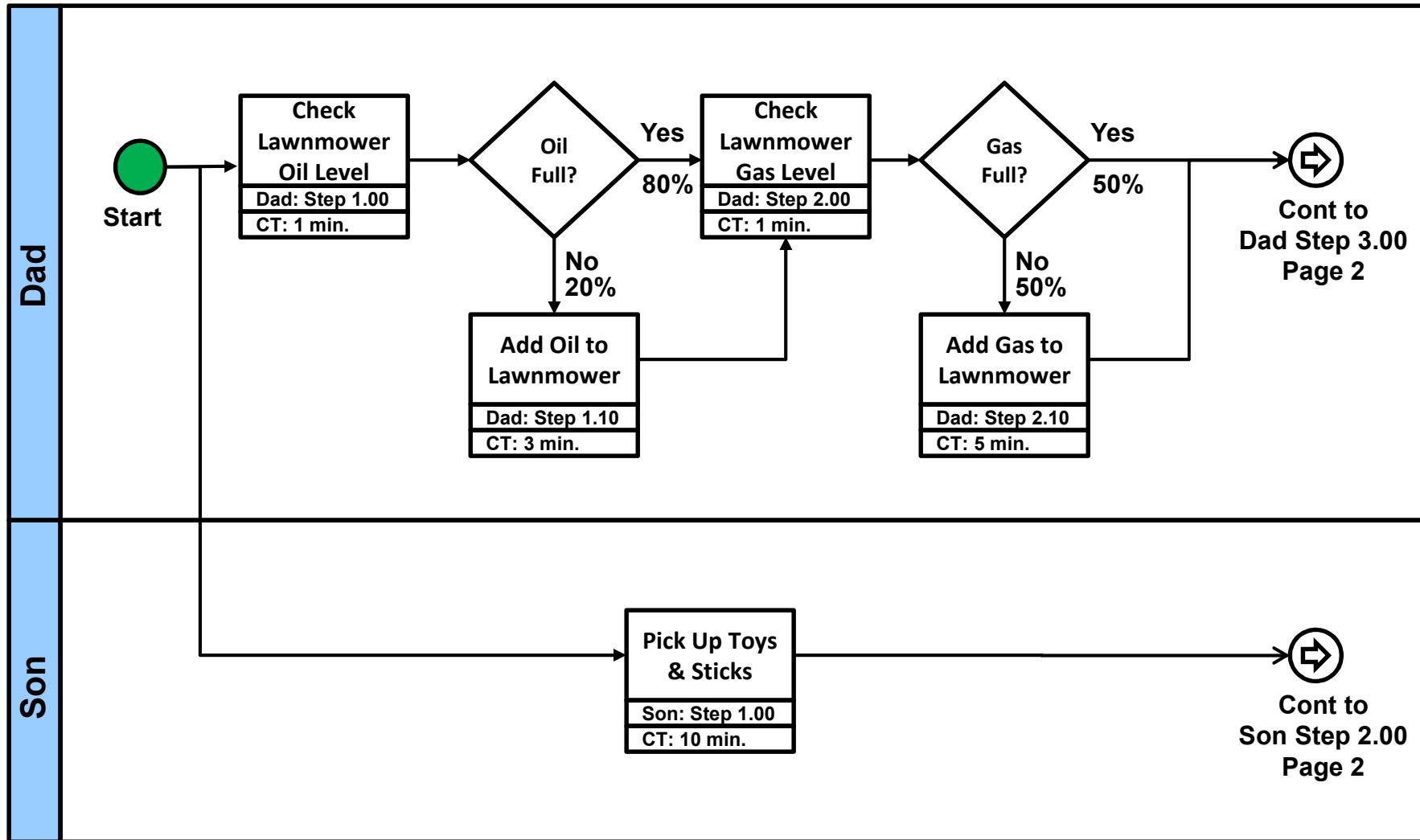
PROCESS MAPPING – BRANCHING vs DECISION

- Decisions are yes and no questions in the process that are asked. A percentage should be capture for each response to identify frequency.
- Branching is the method to display work being directed to other steps in the process that does not require a question (i.e. Mail vs. Fax vs. Email). Like decisions, branches require percentages to show the frequency.

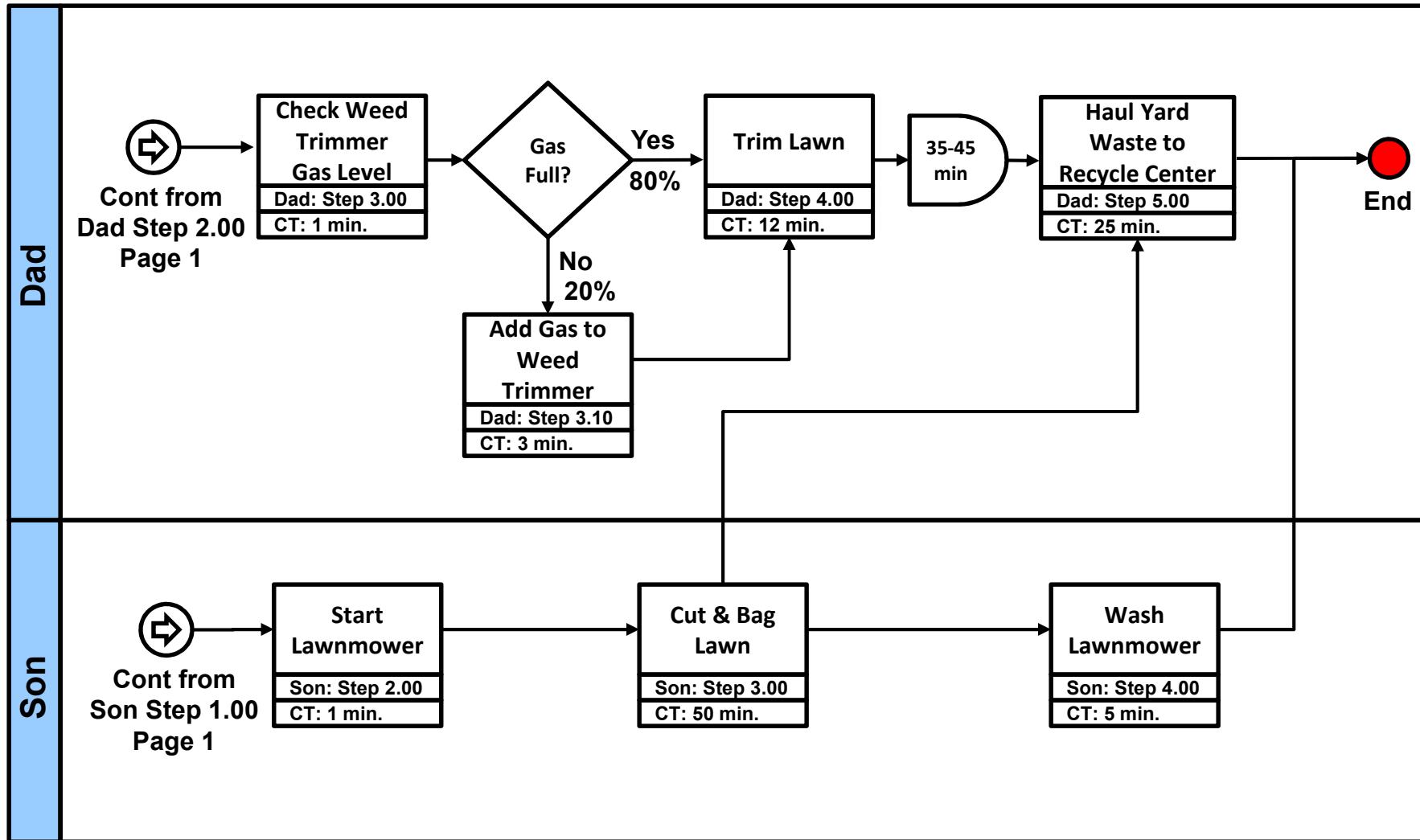
Examples of Branching:



PROCESS MAPPING – SWIM LANES

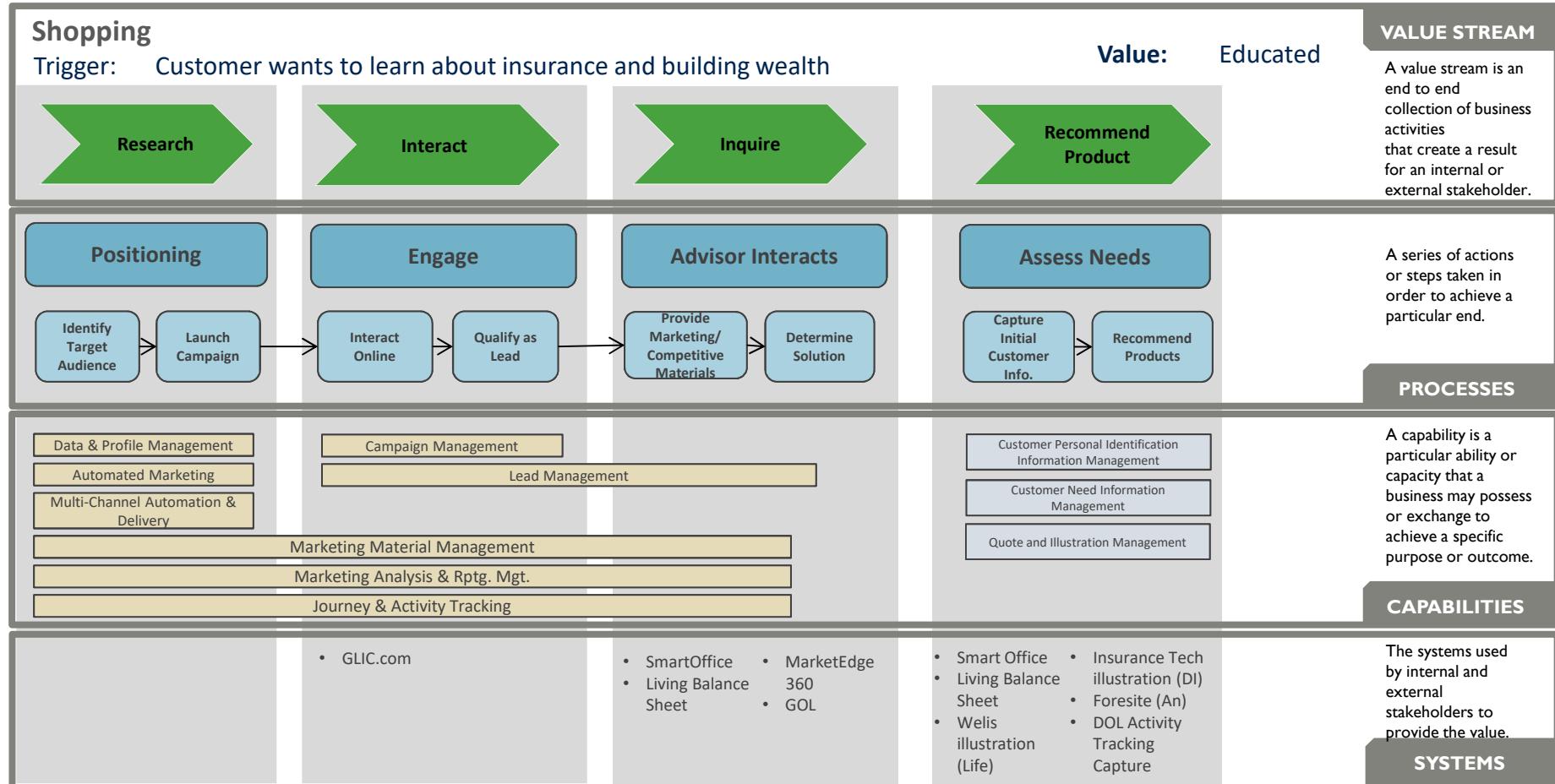


PROCESS MAPPING – SWIM LANES



BUSINESS ARCHITECTURE – CLIENT FACING VALUE STREAM

LEVEL 0



WHAT IS VALUE STREAM MAP (VSM)?

Value-stream mapping is a tool that helps you see and understand the flow of material and information as a product makes its way through the value stream (most important parts of a process). When developing a Value-Stream Map (VSM) follow the products path through the process from Customer to Supplier (note: this is backwards through the process), and carefully draw a visual representation of every process in the material and information flow. When completed, the VSM will allow you to see what is adding value and what is a source of waste. Looking at the process in this way allows you to see what needs to be improved within the full process, just not the individual steps.

Benefits of VSM:

- Helps you visualize more than just the single process steps, you can see the flow.
- Helps you see more than just waste, you can see the sources of waste
- Provides a common language for talking about processes
- Makes decisions about the flow apparent, so you can discuss them
- Ties together lean concepts and techniques
- Forms a basis for an improvement/implementation plan Shows the linkage between the information flow and the material/process flow
- Helps you evaluate the current flow (current state) and then describe what needs to be done to improve (future state)
- Can become a living iterative document to drive continuous improvement toward future state

Conducting a VSM Session

Value Stream Mapping is a Team Effort

- An accurate map requires individuals that are well versed in the process - one individual rarely posses that level of knowledge and might be guessing or giving their opinion vs stating fact
- Working together ensures there will be agreement upon completion
- We solve problems better as a group than we do as individuals

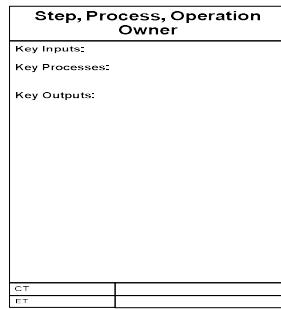
Value Stream Mapping Captures the Real Process

- In order to accurately capture the true process the mapping team must “Go See” the process first hand
- If the team creates the map while sitting in a room they will only be capturing what they believe the process to be as opposed to reality
- You will need to encourage any managers present to be observers – the people running the process hold the facts, managers might tell you what they want it to be!
- Start from the customer and work backward
- Use paper and pencil – anyone can draw the map

When and Why to Use a VSM?

- Used in the Define, Measure or Analyze phase of a project to understand current state and opportunities for improvement
- Typically used where the output is time based:
 - Turn around time
 - Cycle time
 - On time delivery (to due date/effective date)
- Helps to identify those elements of time that are between the value adding steps that may cause significant delays in the process
 - A typical value stream shows that only 5-30% of the time is value added time
- Captures the Voice of the Customer information – what is of value to them (what do they want to pay for)

VSM Symbols



Supplier/Customer – These are the beginning and end of the map – you will indicate what the customer expected deliverables are and what the supplier inputs are

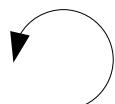
Process box - An action or set of tasks being completed. Shows process critical information like cycle time, lead time, quality level etc as well as inputs and outputs



Queue/wait/inventory - represents how long an item must wait before it enters the next process. Can be accompanied by a time as well as a method – eg first in first out (FIFO)



Push connector – indicates that an item is pushed downstream once it is completed



Pull connector – items are pulled vs pushed downstream

Process Map Symbols



Electronic information flow – signifies information flow between processes/people



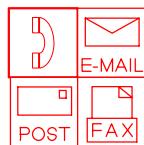
Kanban – represents using a Kanban (visual signal) to authorize doing work



Kaizen Burst - highlights an area where the team believes there can be significant improvement in the process



Database – Highlights databases within process

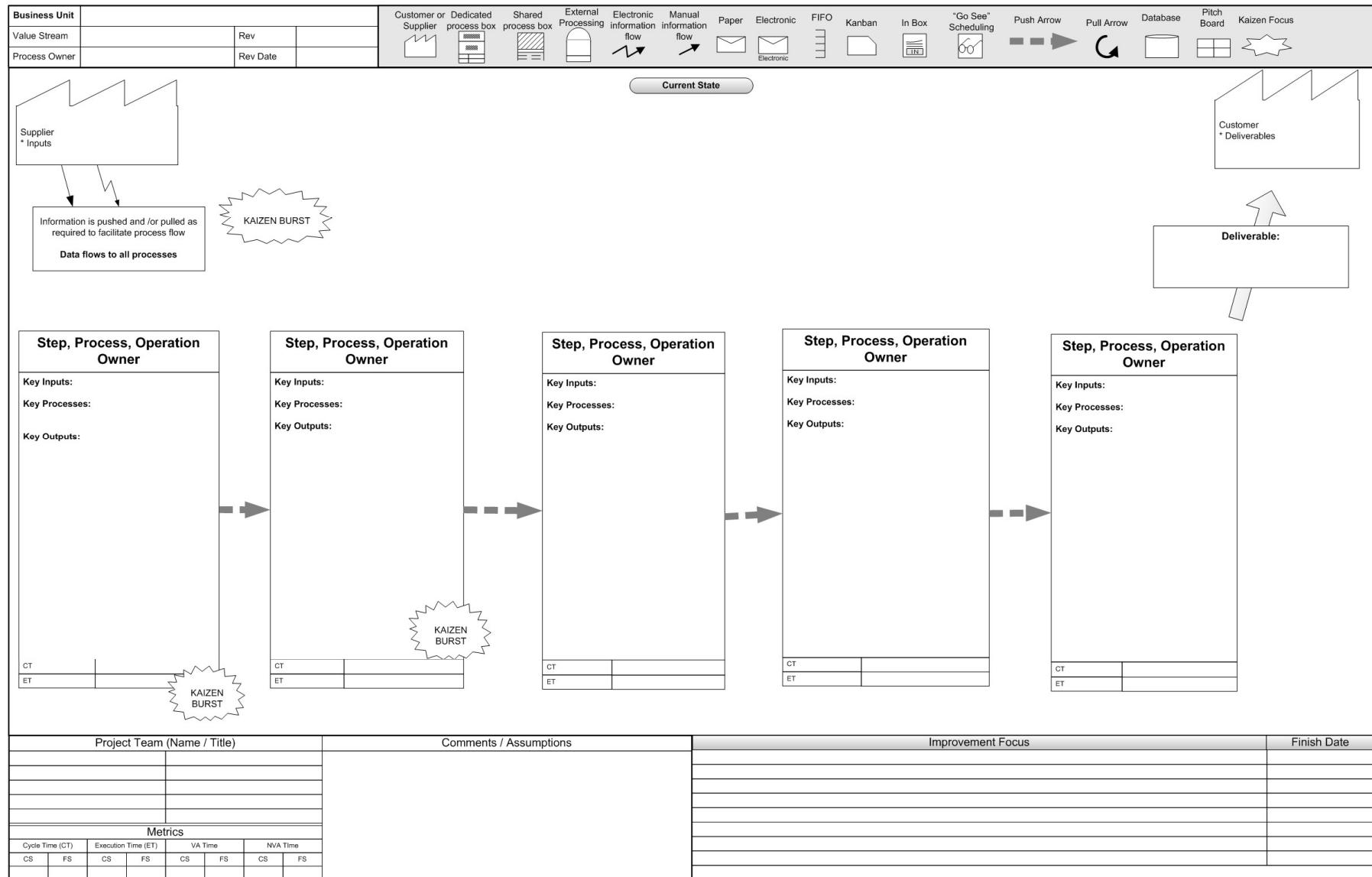


Communication Methods – to show how information, such as RFP, quotes or policies are delivered

Value Add vs Non Value add time (below) – show relationship of how the time is used to benefit the customer

Total Cycle Time = 35 – 46 min.							
0 - 2 min.	5 min.	0 - 2 min.		0 - 7 min.	3 min.		NVA = 8 – 19 min
			15 min.			12 min.	VA = 27 min.

HIGH LEVEL VSM TEMPLATE

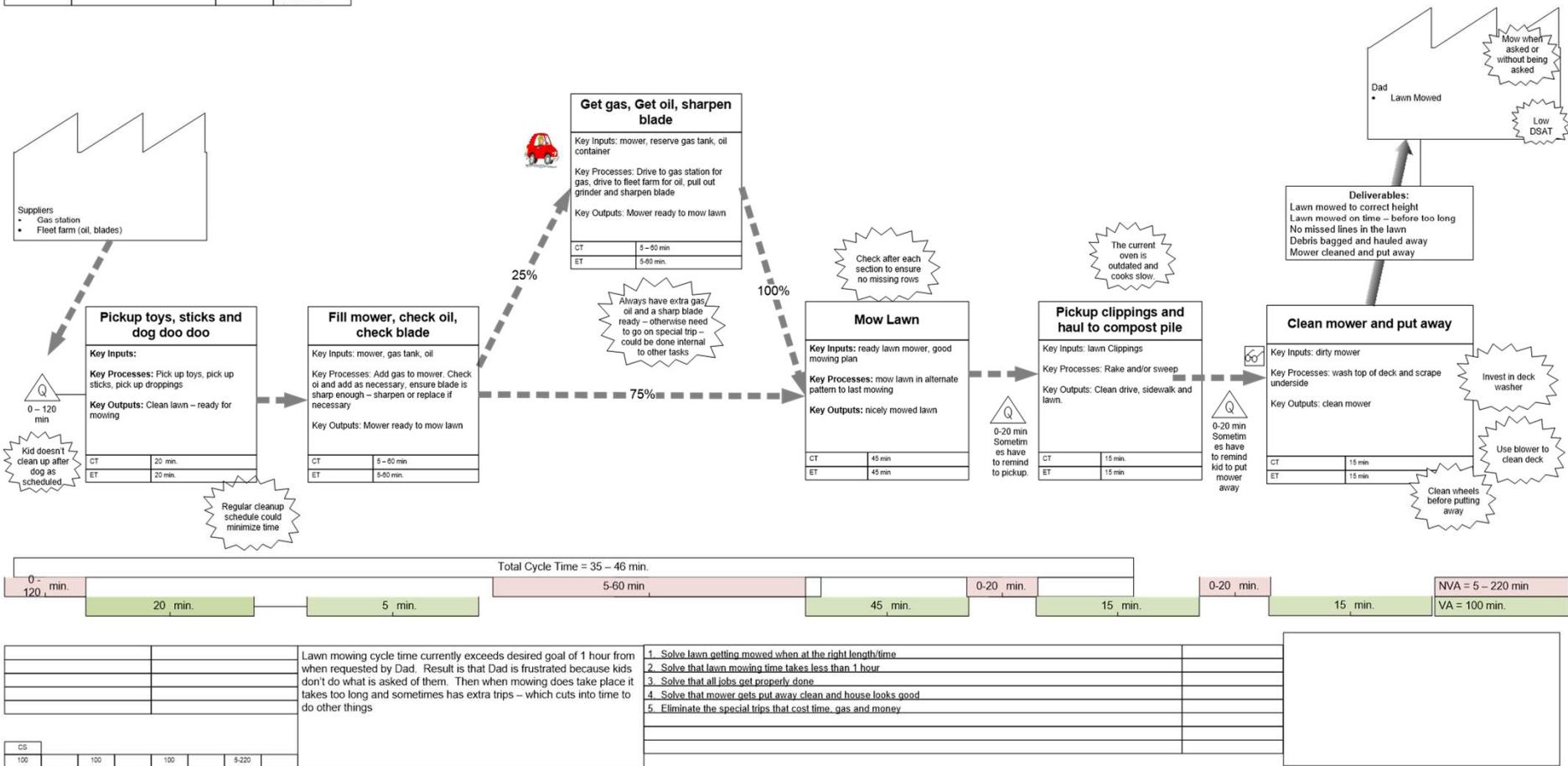


Steps to Create a Value Stream Map

1. **Customer** - Define who is your customer and what it is they want – that is the beginning, you will start there and walk backwards
2. **Document Process Steps** - beginning with the customer, walk the process and capture the deliverables and preceding steps until you get back to the beginning (how ever far you want to take it). Include vital process step information such as inputs, how long the process takes, any quality levels, downtime/unavailability of systems or resources, any rules about queuing/changeover (e.g. we do all dental only cases first, then multiline, etc.) and finally the outputs
3. **Capture the wait/queue times between steps** – identify how much time passes in-between steps. Determine if they are push or pull queues between the steps (is it a queue or a Kanban?). Determine how queues are managed – FIFO, LIFO, FISH😊
4. **Incorporate information flows** – capture any signals that are used, either electronic or manual, to determine how/when work is done(schedules/prioritization) and status communicated
5. **Utilize kaizen bursts to show improvement areas** – point out areas where the team believes it can make significant progress against stated objectives

SAMPLE VSM FOR MOWING THE LAWN

Business Unit	
Value Stream	Lawn Mowing
Rev	A
Process Owner	Rev Date 2/25/2016



HOW TO IMPROVE FUTURE STATE

1. Look for Non-Value added activities – can you eliminate or reduce? Are there wait times that can be reduced or eliminated?
2. Understand customer deliverables – are we “over delivering” pieces?
3. Identify opportunities to move tasks from serial to parallel
4. Do we have any excess motion – travel time?
5. Are there pieces of the value add that can be done more efficiently?

You can typically dramatically reduce the Non Value Add and make great overall progress vs focusing on reducing time spent on the value added items – which is typically incremental improvement

BREAK TIME

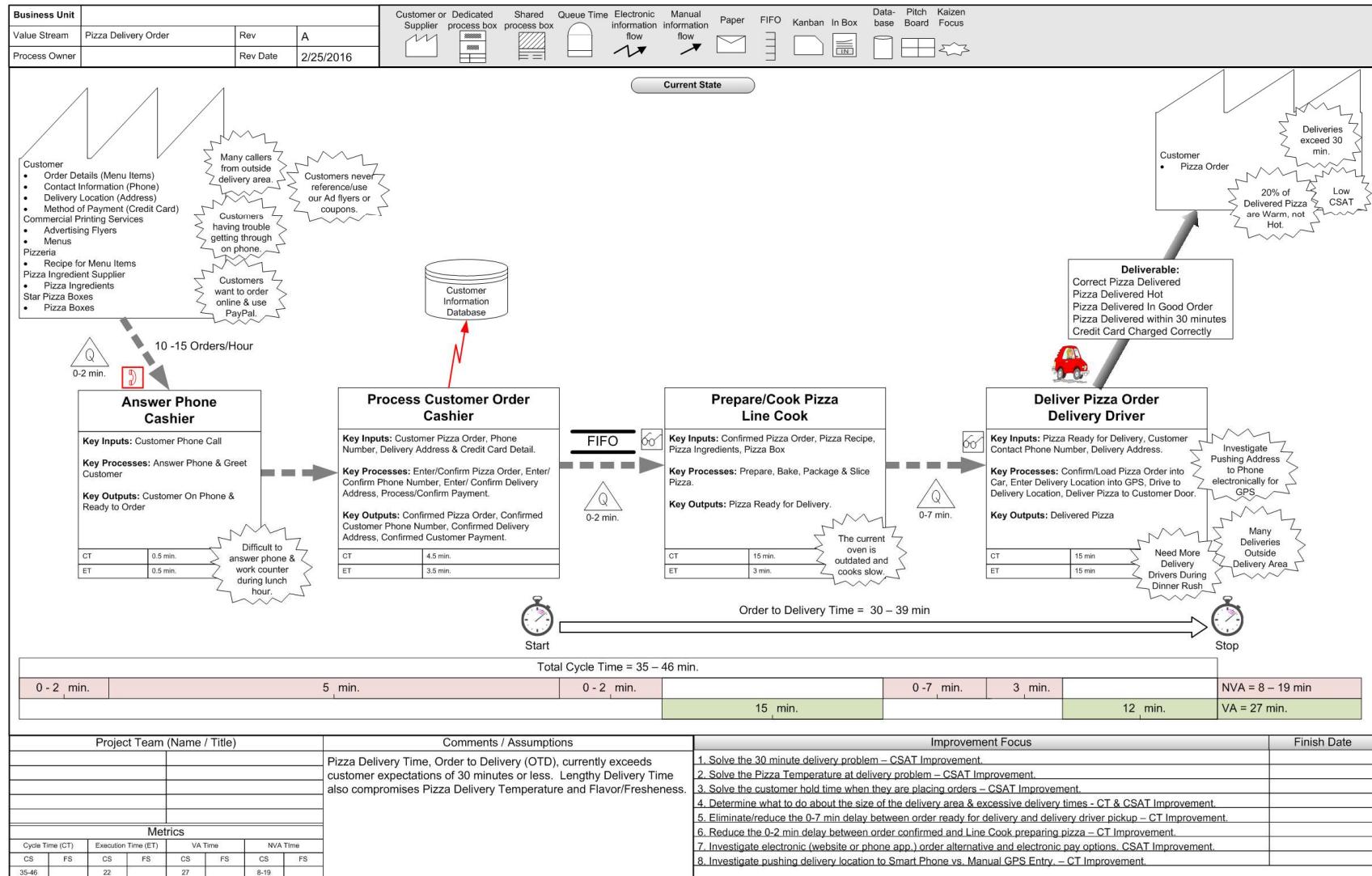
10 Minute Break

DEVELOP A VSM FOR THE PIZZA FULFILLMENT

45 minutes

1. Work backwards from a customer point of view
2. Fill in what's most important for the customer in terms of deliverables and metrics
3. Fill in key process steps, along with metrics such as time, quality, and voice of the customer expectations
4. Ensure you capture push vs pull and wait/queue times
5. Lastly fill out the value add vs non-value add at the bottom

DEVELOP A VSM FOR THE PIZZA FULFILLMENT



PROCESS MAPPING – LET'S MAP!

Use the APS form process.

Do a swim lane for the APS form, from the point at which it's sent till it's full complete and entered into the system

30 minutes

DEFINE TAKEAWAYS

- Has the high-level Process to be improved been determined?
- Has the Team been formed?
- Has the Scope been defined?
- Has the overall Problem been defined?
- Has the Team conducted a Voice of the Customer and/or Voice of the Business?



MEASURE

INTRODUCTION TO MEASURE

Purpose of Measure Phase

- Identify critical measures necessary to evaluate the process
- Validate measurement system
- Determine the capability of the process
- Set the improvement target



PROCESS MAPPING – EFFORT TIME VS CYCLE TIME

Unit Time: Amount of effort time to do work.



Input App:
5 Minutes



Quality Review:
10 Minutes

Total Unit Time:
15 Minutes



Cycle Time: The elapsed time to complete the process -
aka “turnaround time”



Receive App:
Day 1



Input App:
Day 1



Quality Review:
Day 2

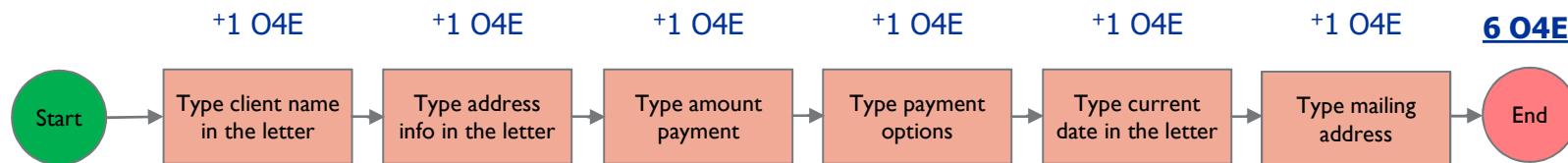


Total Cycle Time:
2 Days

OPPORTUNITY FOR ERROR (O4E)

Describes how many opportunities to make an error occur in a process and/or at a process step. It is important to distinguish between actual errors and the opportunity to make an error.

Systematic Withdrawal – Manual Letter



Systematic Withdrawal – Automated Letter



Is reducing the opportunity for error going to help reduce errors? Is it going to reduce cost? Where and How?

How could O4E be reduced without a system enhancement?

What are additional savings of the changes?

RISK ANALYSIS

Critical steps have Risk

What is risk?

The chance of loss;
degree of loss

How do you handle
risk?

- Identify risks
- Analyze risks
- Mitigate risks

When do you handle
the risks?

At every stage of the
DMAIC process



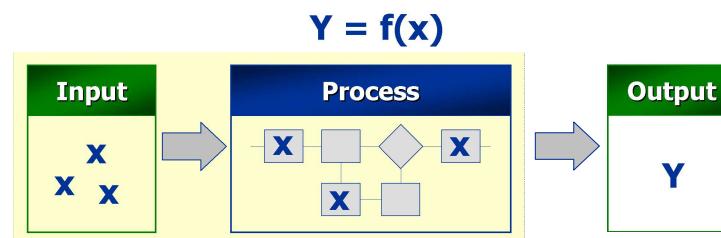
FAILURE MODE AND EFFECT ANALYSIS

Measures Risk on 1 to 10 Scale

<u>Severity</u>	x	<u>Occurrence</u>	x	<u>Detection</u>	=	<u>RPN</u>
Impact of the effect on customer requirements		Frequency with which a risk occurs		Ability to detect or prevent a risk		
1 Not noticeable		1 < 1% of the time		1 100% is immediately visible		
5 30 Minutes of Rework		5 5 – 9% of the time		5 A random scheduled audit is conducted on a random percentage of work.		
10 Customer leaves or business is exposed to a fine		10 90-100% of the time		10 The process is not audited and/or the failure cannot be detected		
Multiply scores together to get the Risk Priority Number (RPN)						

DATA COLLECTION

1. Select What to Measure
2. Develop Operational Definitions
3. Prepare Data Collection Plan
4. Validate the measurement system (see section on MSA)



DATA COLLECTION – TYPES OF DATA

Continuous (Variable) Data

- Has no boundaries between adjoining values
- Includes most non-counting intervals and ratios
- Examples include: Time, Weight, Speed, Height

Attribute (Discrete) Data

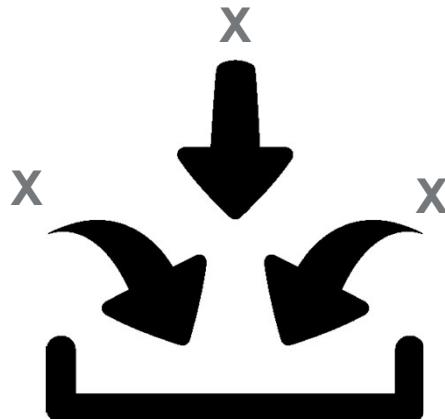
- Has distinct categorical values and clear boundaries
- Includes nominals, counts and rank-orders
- Attribute data can be broken down into Nominal (client segment, marital status) and Ordinal (rank)
- Examples include: In Good Order or Not in Good Order; Correct or Incorrect; High Priority or Low Priority

Continuous data typically tells us more about the process

SELECT WHAT TO MEASURE

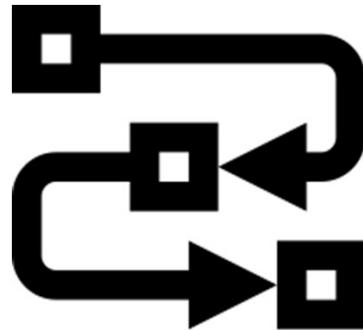
Input Indicators

- Measured by their effectiveness against the requirements / needs of the process
- Referred to as “Xs”



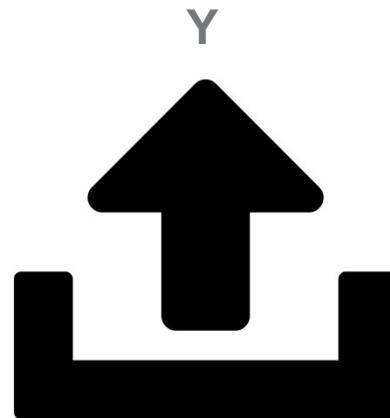
Process Indicators

- Measured by their efficiency
- Referred to as “Xs”
- Examples
 - Cost per transaction
 - Time per activity
 - Amount of rework



Output Indicators

- Measured by their effectiveness against a customer requirement
- Referred to as “Ys”
- Examples
 - Percent defective
 - Number of errors
 - Total cycle time
 - Revenue



Ensure that data collected provides the insight you need

Consider how the data may be stratified or divided based on key characteristics

DEVELOP OPERATIONAL DEFINITIONS

Operational Definitions

- Provides precise description of what data is to be collected
- Eliminates ambiguity
- Provides a foundation for the team to build consistency and reliability into data collection

Steps to Develop

- Create a draft definition for each metric to be measured
- Test the definition on a small sample
- Refine as necessary

“An operational definition puts communicable meaning into a concept.”

- W. Edwards Deming

PREPARING A DATA COLLECTION PLAN

Why preparing a Data Collection Plan is a good idea:

- Preliminary thinking and planning the data collection activities saves the team time and effort
- Structures the data in a way that everyone understands what data will be collected and under what conditions

Performance Measure	Operational Definition	Data Source and Location	How will Data Be Collected	Who Will Collect Data	When Will Data Be Collected	Sample Size

MEASURE TAKEAWAYS

- Has the team identified critical process metrics?
- Do we have well developed operational definitions?
- Do we have an effective measurement system?
- Have we developed the process baseline?
- Are there any process / data patterns?



GROUP EXCERCISE

For the APS form missing information:
What do you need to measure?
Discuss and develop a plan

10 min

ANALYZE

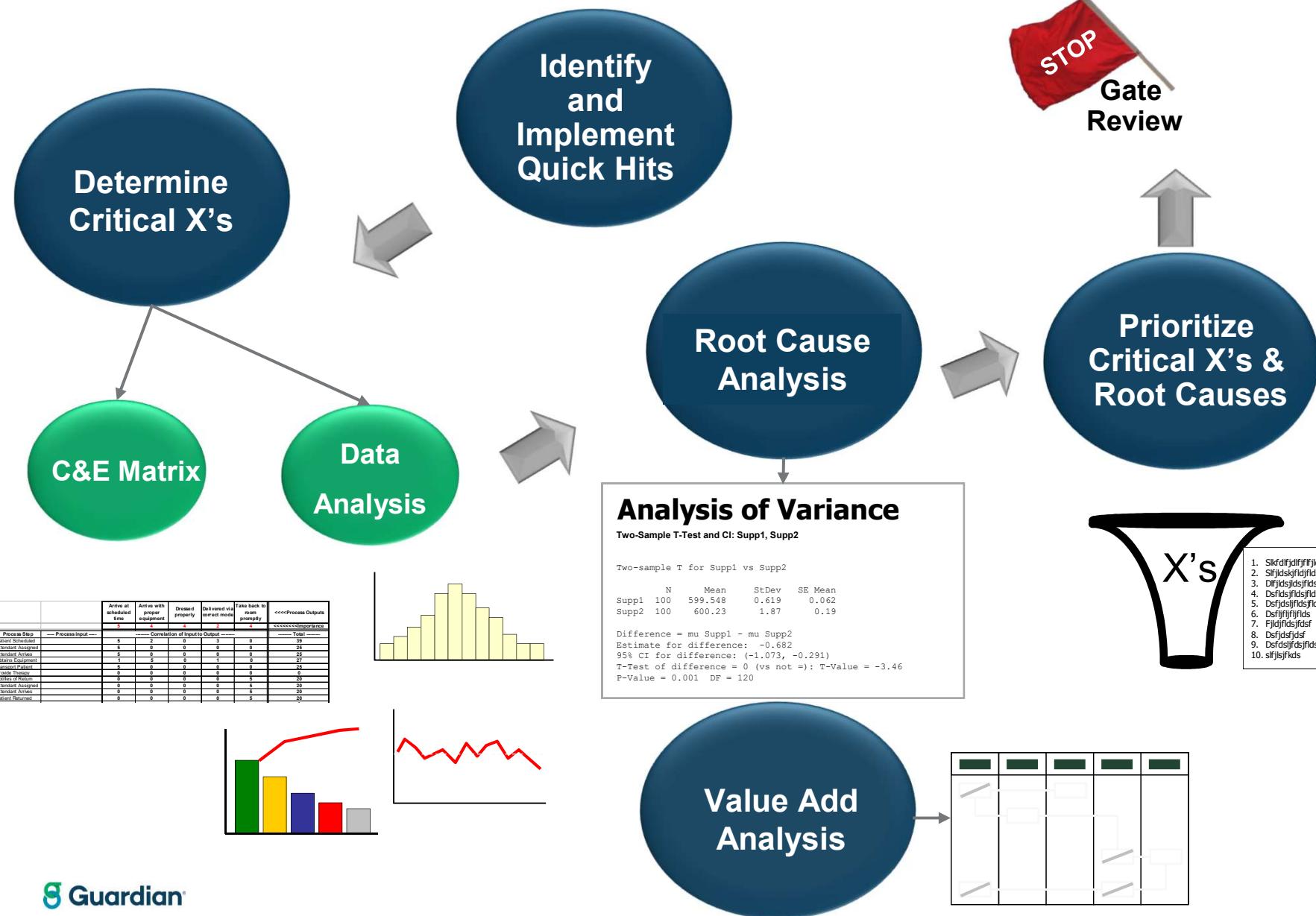
INTRO TO ANALYZE

Purpose of Analyze Phase

- Analyze the process
- Brainstorm to identify potential causes
- Screen potential causes
- Verify causes with data



ANALYZING THE PROCESS



Key Lean Definitions

To describe speed, efficiency , throughput and capacity of a process



Process Cycle Time (PCT): The time from release of a product into a process until its completion

- Example: The elapsed time from when a homeowner calls, to when the mortgage refinancing closes averages 33 days

Work-In-Process (WIP): Product that is within the boundaries of the process

- Example: There were 3300 refinance applications in process at the end of the month

Exit Rate (Throughput): The output of a process over a defined period of time

- Example: Our process closed 100 mortgage refinance applications per day last month

Little's Law

Relationship between Work In Process (WIP), Process Cycle Time (PCT) and Throughput

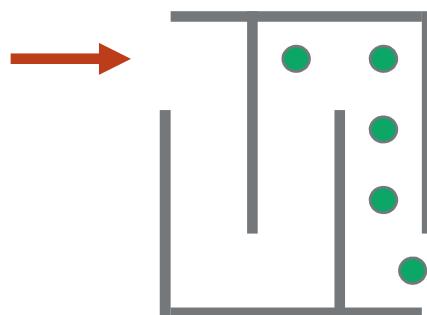
$$PCT = \frac{WIP}{EXIT RATE}$$

- Used to size number of people, paperwork, projects – any process!
- Lower Process Cycle Time = More “Learning Cycles” (Learning Cycle = number of instances to learn about the process)

Cycle Time

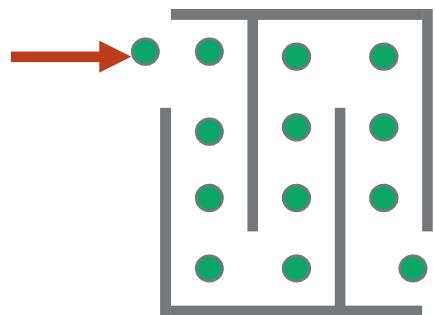
WIP/Exit Rate

Think about the lines at Disneyland in March...



$$\text{Cycle Time} = \frac{\text{WIP}}{\text{Exit Rate}} = \frac{5 \text{ people}}{1 \text{ person/minute}}$$

Cycle Time = **5 minutes**



$$\text{Cycle Time} = \frac{\text{WIP}}{\text{Exit Rate}} = \frac{13 \text{ people}}{1 \text{ person/minute}}$$

Cycle Time = **13 minutes**

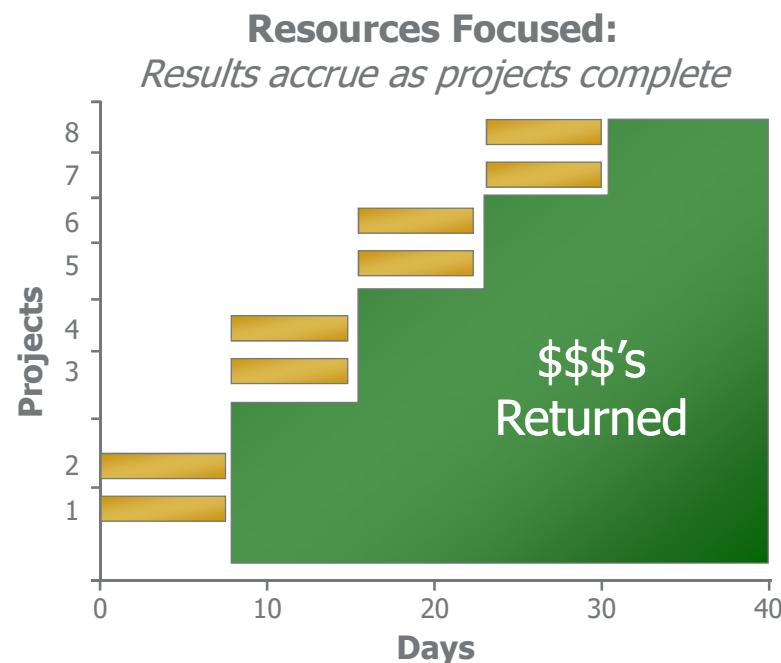
Conclusion: Fixed Capacity (Exit Rate) + Increased People (WIP) = Slower Cycle Times (PCT)!

The Pull Approach

Traditional Approach: Start all projects at once. Have each of 4 resources split their time evenly between 2 projects of 30 man-days of work each:



Pull Approach: Minimize those same projects in process: this time use the 4 resources by teaming 2 people on the two highest priority projects until they are complete:



Process Balancing

A procedure whereby a set of process steps are “equalized” in terms of time required to accomplish them (note “effort” may not be the same!)

- Process balancing tools are used where the process is contained in a defined area Examples include:
 - Order Entry Department
 - Mortgage Application Process
- Key tools used in process balancing are the time study and takt time chart, but other tools such as skill matrix, etc., may play a significant role in the analysis
- The Process Balancing techniques are not exclusive to “one-piece flow” – small batches may be necessary between certain steps – but use of the process balancing tools is meant to drive the process to one-piece flow

Takt Time and Takt Rate

We use Takt Time when
describing the output of a
given step/task

Takt Time = Customer Demand
(stated in time per unit)

Example: Takt Time = seconds/piece

Takt Time =

Production Time Available

Number of Units to Produce

We will use Takt Rate when
referring to Customer Demand

Takt Rate =Customer Demand
(stated in units per time)

Example: Takt Rate = pieces/second

Takt Rate =

Number of Units to Produce

Production Time Available

Process Balancing

Design Principles

- Minimize movement
- Stabilize then minimize Cycle Time
- Maximize resource efficiency
- Minimize number of process steps
- Balance tasks/labor across process steps
- Maximize space utilization
- Minimize takt variance
- Minimize Non-Value Add (conveyance, standby, and motion wastes)
- Minimize the need to re-balance as demand requirements change
- Minimize volume variability (combine product category demand)
- Maximize flexibility to allow for product introductions and discontinuations

More Lean Definitions

Capacity: The maximum amount of service a process can deliver over a continuous period of time

Example: The capacity of our process is 120 mortgage applications per day

Time Trap: Any process step that inserts delay time into a process. We are concerned with the time trap that injects the MOST delay.

Example: our property appraisers evaluate 120 properties per day, all other process steps can process 145 applications per day

Constraint: A time trap that is unable to produce at the exit rate required to meet customer demand (internal or external)

Example: our property appraisers can only evaluate 120 properties per day, but customer demand is currently 130 applications per day!

Time Trap

What is a time trap?

- A time trap limits the output of the process and therefore has less capacity than the prior or following steps. It limits throughput.
- A time trap can change over time (monthly, weekly, even daily) based upon “service” mixes or special causes (new service introductions, special orders/requests)
- A time trap can be caused by physical problems (such as process flow, personnel availability, mistakes, etc.)
- A time trap can also be caused by non-physical problems (such as procedures, morale, unsafe environment, or training)
- There is **ALWAYS** a time trap in a process!
- A **constraint** is a time trap that cannot meet customer demand (a constraint is **ALWAYS** a time trap, but a time trap may not be a constraint!)

What Is a Time Trap?

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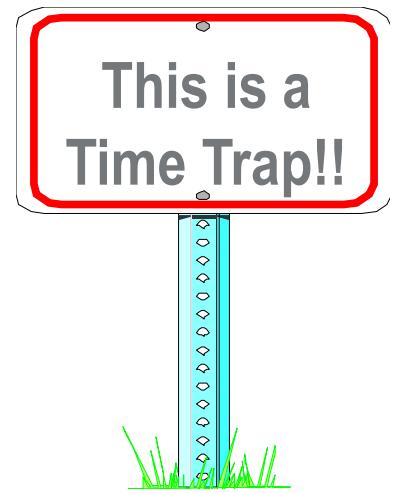
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There is **ALWAYS** a time trap in a process!

A constraint is a time trap that cannot meet customer demand (a constraint is **ALWAYS** a time trap, but a time trap may not be a constraint!)



Time Trap Effect on Capacity: **Cycle Time Effect on Capacity**

Cycle time can indirectly influence throughput (and thus capacity) by:

Increasing productivity:

- Less search, moving, working around work in process

Decrease rework and lost work:

- Catch mistakes quicker
- Discover lost work faster

How Are Time Traps Created?

Poor process flow

Lack of service/information

Movement of service/information

Handoffs

Setups

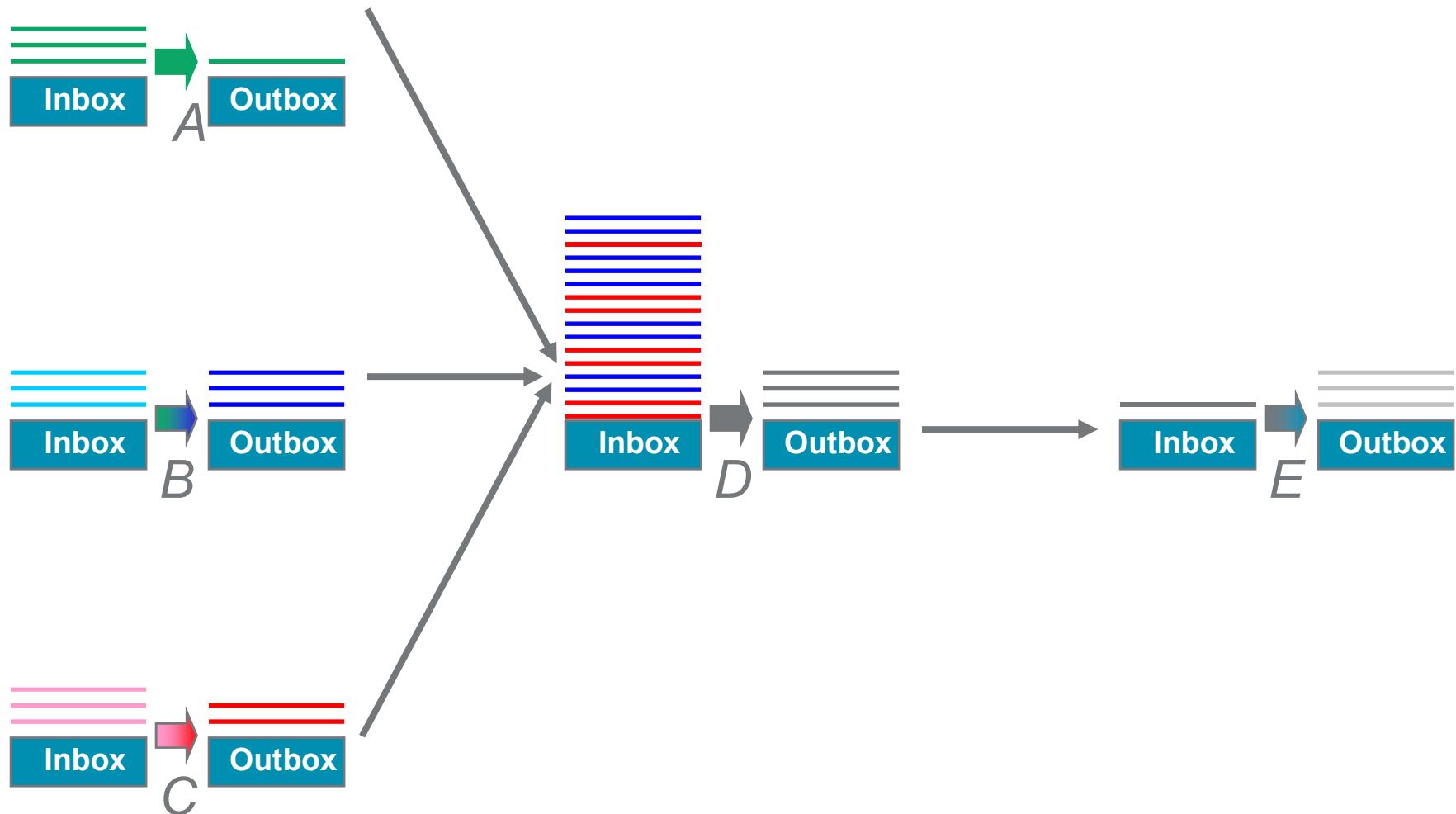
Quality issues/rework

Resource uptime (computers, networks)

Variability

Process complexity

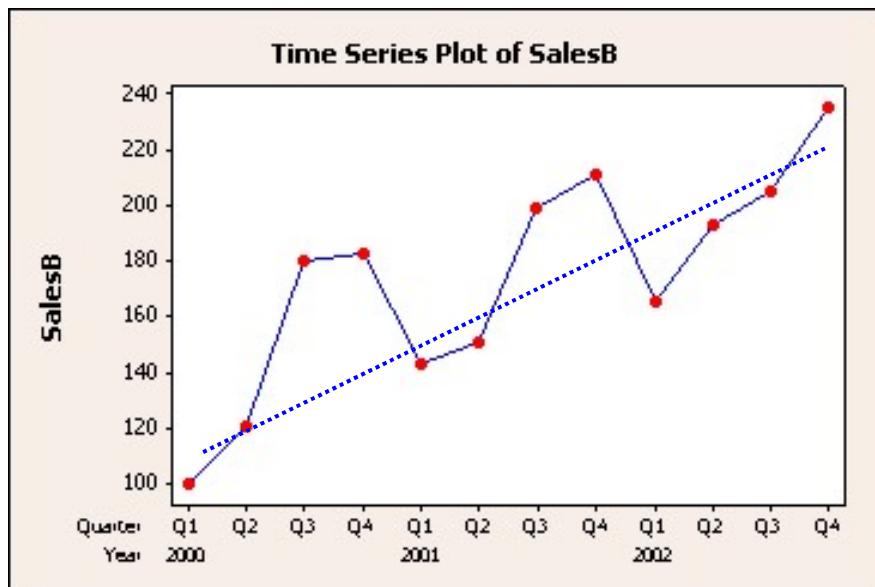
Where is the Time Trap?



Analyzing Data - Charts

What is a Run Chart?

A graphic representation of process performance data tracked over time. Run charts best represent continuous data.



Why would I use a Run Chart? To show if the process is changing over time and to look for trends.



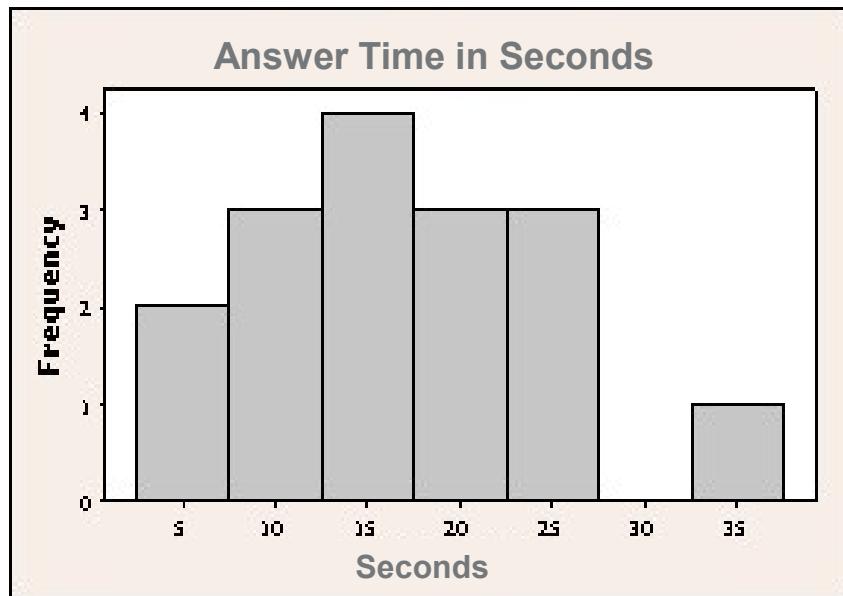
Graph > Time Series Plot

Stat > Quality Tools > Run Chart

Analyzing Data - Charts

What is a Histogram?

Graphical representation of a data set where bars (called “classes” / “bins”) represent groups of data and the number of data points within each class is counted.



Why would I use a Histogram? To evaluate the distribution of a set of data. You will learn about the basic shape of the data set that will help determine which statistical tests can be used for further analysis.

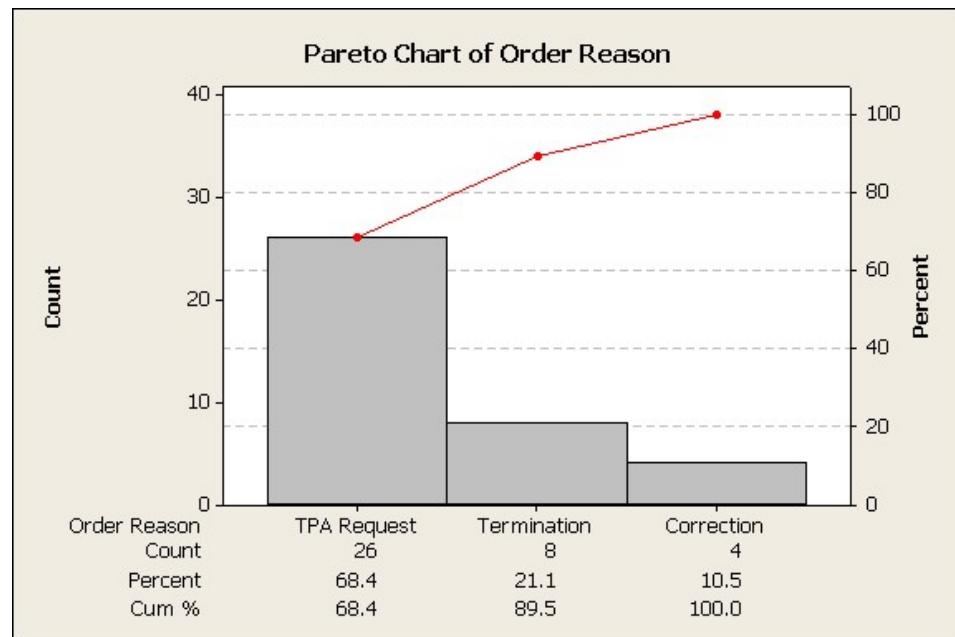
Minitab

Graph > Histogram

Analyzing Data - Charts

What is a Pareto Chart?

Specialized bar chart, representing categories rather than a continuous scale, that help draw focus on the “vital few” categories. The categories are typically defects, errors or sources (causes) of defects/errors. Pareto charts are based on the 80/20 rule.



Why would I use a Pareto Chart? By arranging the bars from largest to smallest, a Pareto helps determine which categories are the largest contributors and which categories are the “trivial many” (minor contributors).

Minitab

Stat > Quality Tools > Pareto Chart

GROUP EXCERCISE

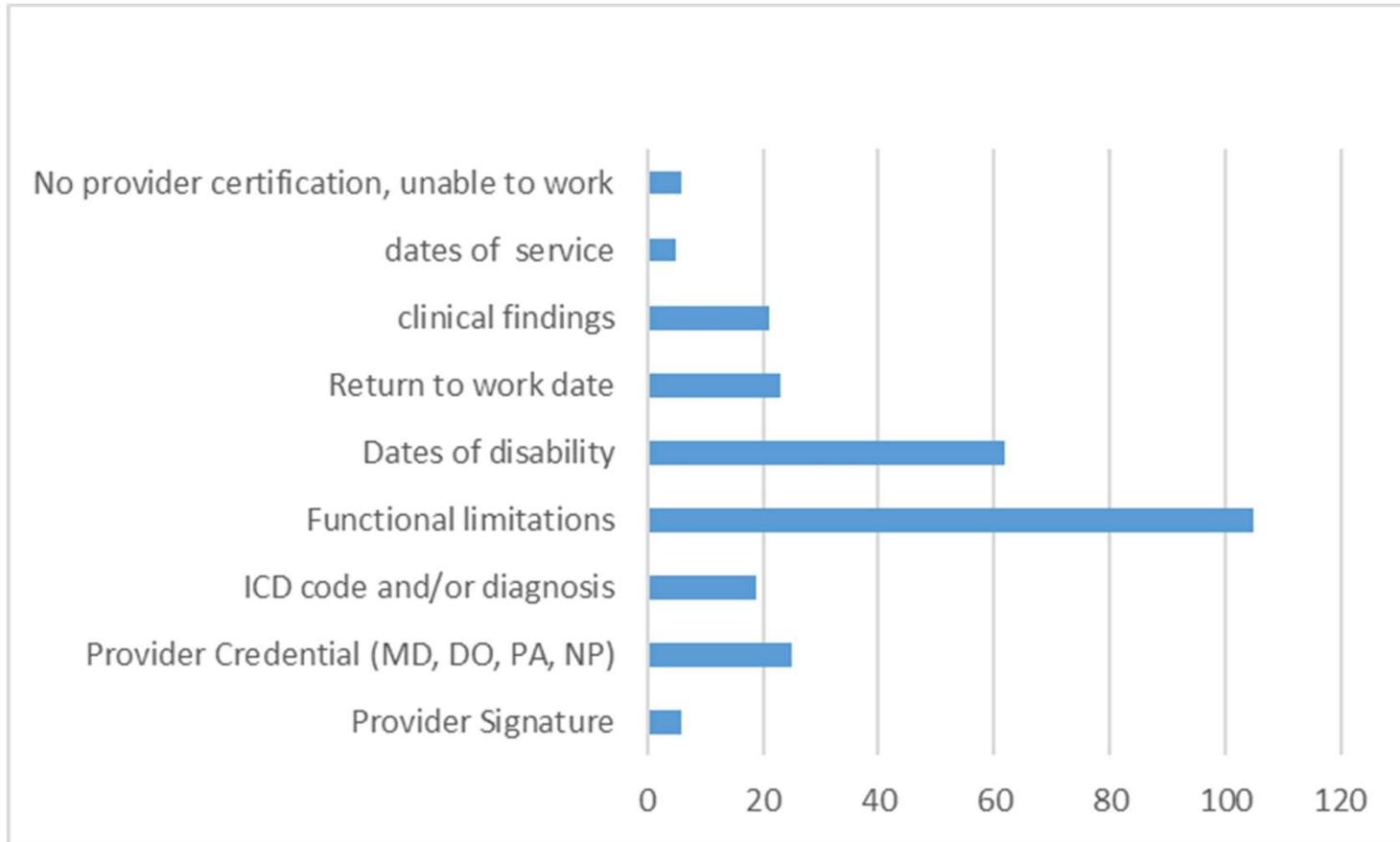
What graph would you use for the data collected?

Data collected from close to 300 APS forms

Missing information field	Occurrences
Provider Signature	6
Provider Credential (MD, DO, PA, NP)	25
ICD code and/or diagnosis	19
Functional limitations	105
Dates of disability	62
Return to work date	23
clinical findings	21
dates of service	5
No provider certification, unable to work	6

GROUP EXCERCISE

Histogram



Waste analysis

Defects: Mistakes and errors that require rework

D

Overproduction: Producing more than what the customer asked for

O

Overprocessing: Adding more value than what the customer paid for

O

Transportation: Moving items or information

T

Inventory: Excess materials that are not being used or work in progress

I

Motion: Unnecessary movement of people or tasks

M

Talent: Under utilizing a person or assigning a person to a task who does not have the skill set to complete

T

Waiting: Waiting for information or items

W



QUICK IMPROVEMENT AND KAIZEN

Quick Improvement

Already in Improve phase

Only determination is how to implement

No need for Analyze Phase



Kaizen Event

Focuses on a specific improvement objective

Accelerated DMAIC

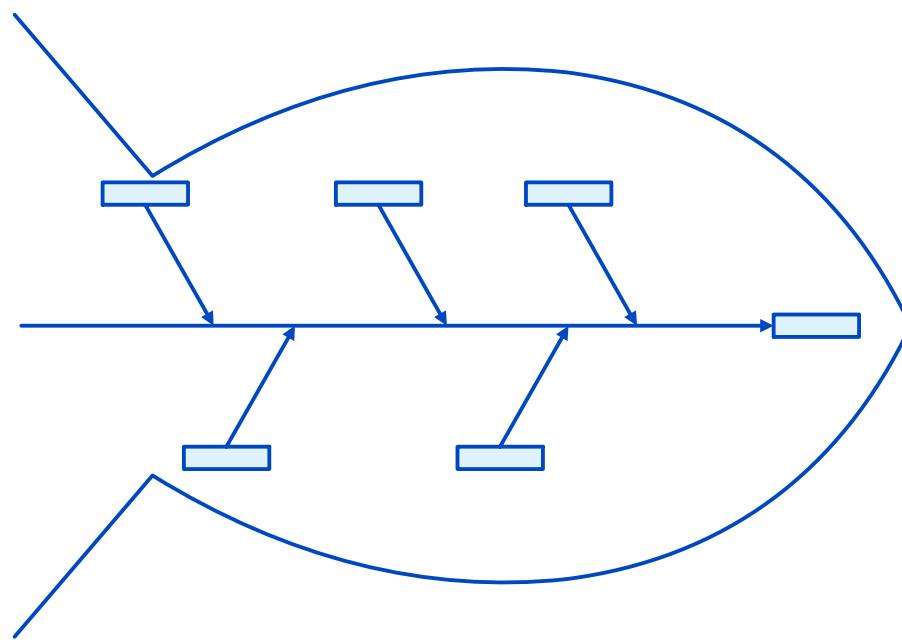
Still need to analyze for a solution



CAUSE AND EFFECT DIAGRAM

Fishbone or Ishikawa

- Provide structure for determining cause and effect relationships
- Provide a visual representation of relationships between potential causes
- Help prevent jumping to solution without identifying root causes



Think about the 5 “M”s to help start the discussion:

- Methods
- Machinery
- Management
- Materials
- Manpower

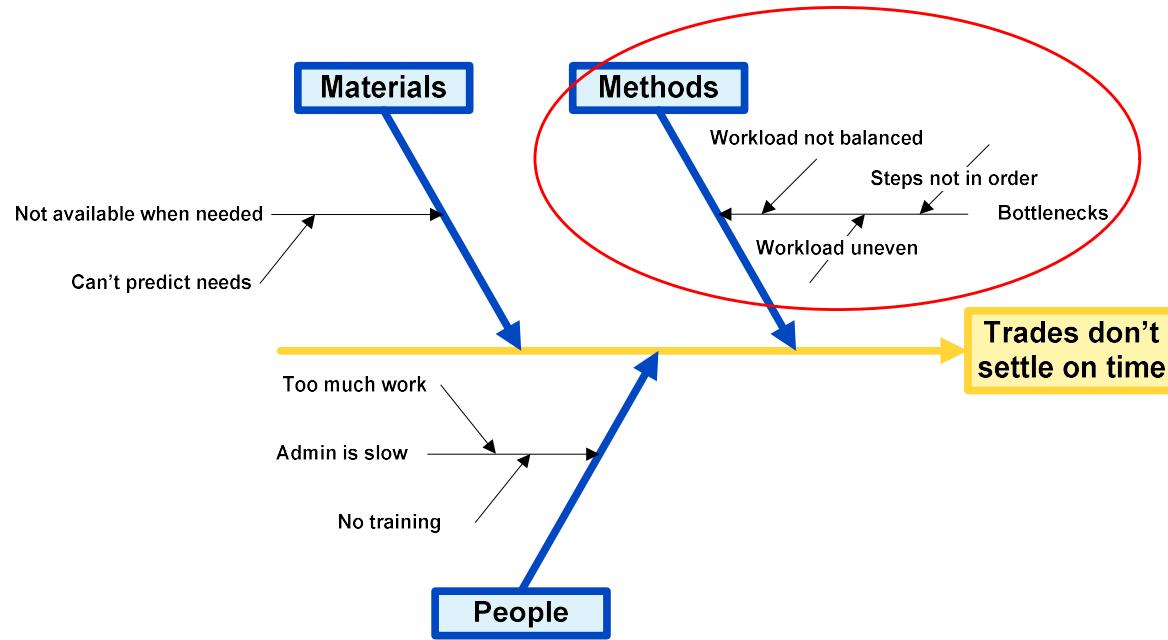
CAUSE AND EFFECT DIAGRAM AND 5 WHYS

Problem: Computer Storage Costs Too High

1. Why? Users keep too many large files as email attachments
2. Why? Users don't know that this results in an extra charge to the company
3. Why? Email policy not communicated
4. Why? Official email policy not issued
5. Why? The official policy document was too large to attach to email.

Encourage convergent verses divergent thinking

SELECTING CAUSES TO VERIFY



- Consider all potential causes
- Use judgment to identify most likely causes
- Focus on things that can be changed
- Consider how to measure potential causes

The cause and effect relationship must be verified with data

GROUP EXCERCISE

Do a fishbone on the APS missing information

ANALYZE TAKEAWAYS

- Has the team developed potential causes?
- What causes are statistically significant?
- What causes are practically significant?
- Has the team identified/verified the actual root cause(s) with data?



IMPROVE

INTRO TO IMPROVE

Purpose of Improve Phase

- Generate Potential Solutions
- Develop a Future State
- Select and Pilot Solutions
- Provide Training for Pilot Group
- Develop a Control Plan
- Develop a Process Dashboard
- Implement the Solutions



BRAINSTORMING

- Brainstorming: a method of generating lots of ideas quickly
- Brainstorming Rules:
 - Start with silent thinking time
 - Set a time limit
 - Encourage creativity
 - Don't evaluate; suspend criticism
 - Build on ideas
 - Post ideas
 - Consider round-robin to encourage balanced participation



The best way to have a good idea is to have lots of ideas.

- Linus Pauling, Nobel Prize winner

BRAINSTORMING STEPS

1. State the purpose or central theme of the session and obtain agreement
 - ✓ Tip – Write it down using a flipchart or whiteboard
2. Each team member gives their idea(s)
 - ✓ Tip – Have the team write down their ideas first, then take turns sharing with the group and be sure to encourage full participation
3. Record each idea on the flipchart or whiteboard
 - ✓ Tip – Ensure every idea is recorded and is visible to the group
4. Continue to share ideas in turn until all ideas have been expressed
 - ✓ Tip – Keep the process moving and the discussion focused
5. Review the ideas for clarity
 - ✓ Tip – Conduct a Multi-Voting session or create an Affinity Diagram with the results

VALUE ADD VS NON-VALUE ADD



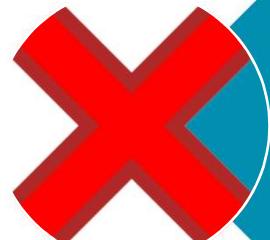
Customer Value Add

1. Transforms the item or service toward completion
2. Customer cares and would be willing to pay for it
3. Done right the first time



Non-Value Add Required

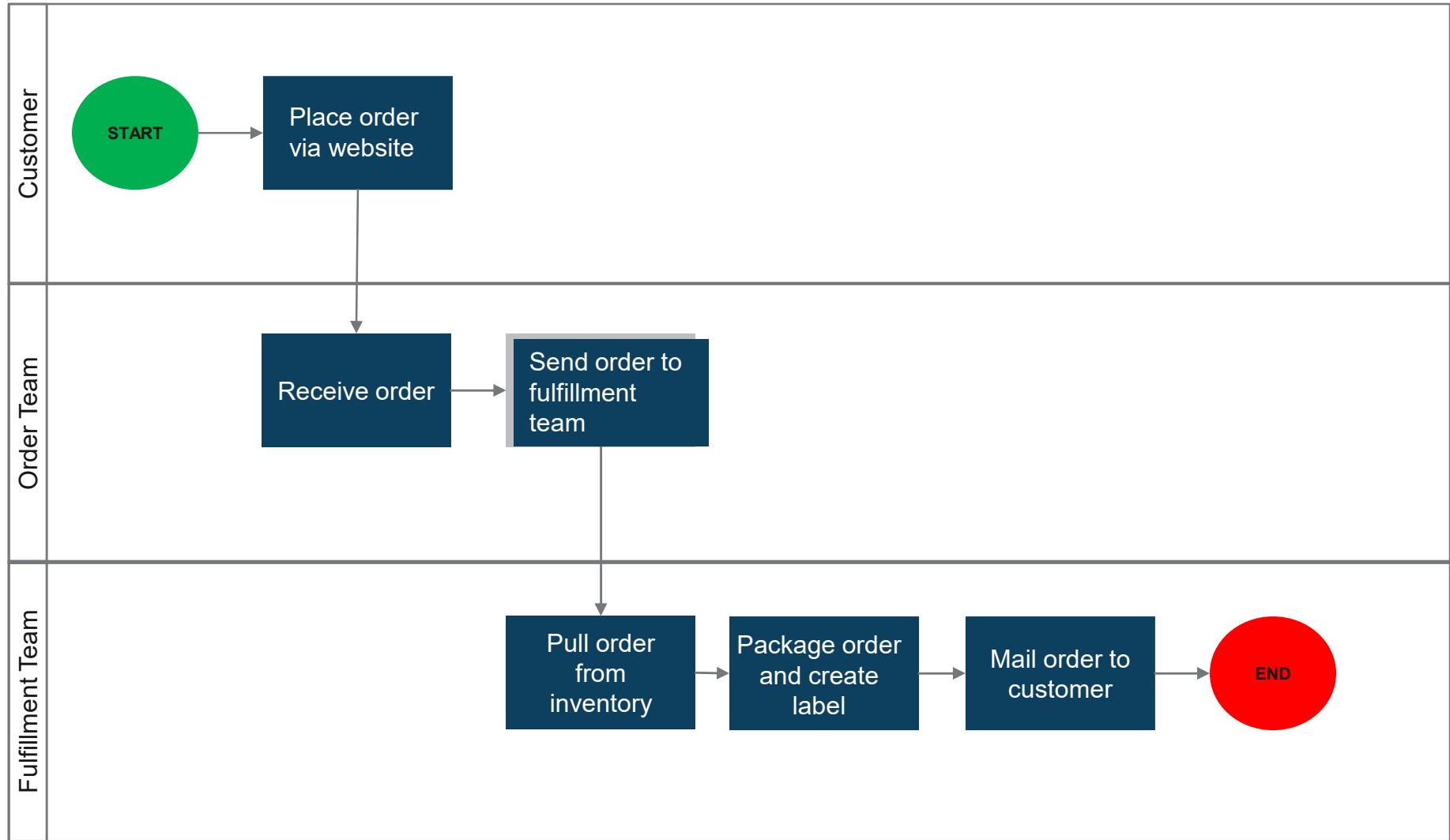
1. Steps that allow overall greater effectiveness or efficiency in the process
2. Required steps due to business needs (i.e. Regulatory requirements)



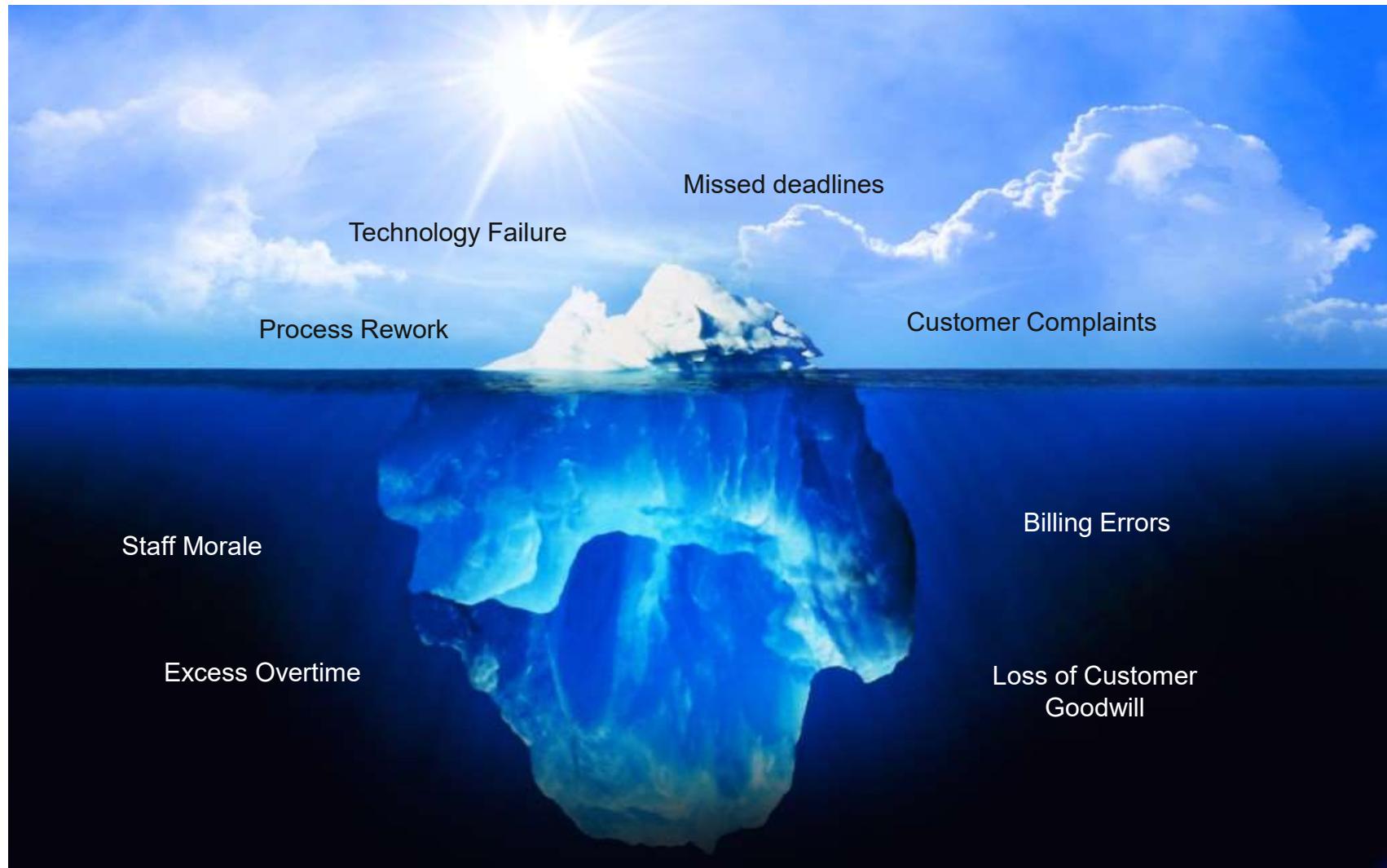
Non-Value Add

1. Waste in the process
2. Not valued by the customer

REMOVING NON-VALUE ADD



COST OF POOR QUALITY



Planning and Designing Processes

Why not just inspect out defects?

No inspection is 100 percent effective in finding defects within a product. If you doubt this, then try this experiment:

- Count the number of times the letter "e" appears on this page.
- Once you have counted the number of times that "e" has been used, write your answer on the sheet of paper provided to you by the instructor.
- These will be collected, and the instructor will tally the number for the class and will show you the results.

PILOT

What is a pilot?

A pilot is a test of a proposed solution



What are the benefits of a pilot?

- Reduce risk of failure or unknown complications
- Increased buy in by management
- Better solution with fewer surprises
- Less expensive than going live right away

TIPS FOR A SUCCESSFUL PILOT

- Make careful observations of all activities, effects and interactions
- Continue the pilot long enough to establish a reliable baseline of data
- Manage expectations and perceptions of customers, management and staff
- Improve on the design if any weaknesses, risks arise
- Celebrate success

GROUP EXCERCISE

Make improvement recommendations and suggest pilot for the APS form

30 minutes

IMPROVE TAKEAWAYS

- Has the team identified potential solutions?
- Has the team selected a solution based on estimated impact?
- Has the team executed a successful pilot?
- Is the Project Sponsor satisfied with the results?
- Has the team developed a control plan and dashboard?



CONTROL

Intro to control

- Demonstrate Actual Improvement
 - Prove the process change
 - Show the change makes the process better
- Demonstrate the Improvement is Sustainable
 - Process is documented
 - Process Maps
 - Training
 - Standard work (SOPs)
 - Control plan working
 - Improved process is stable
- Handoff from Project Team to Ongoing Operations

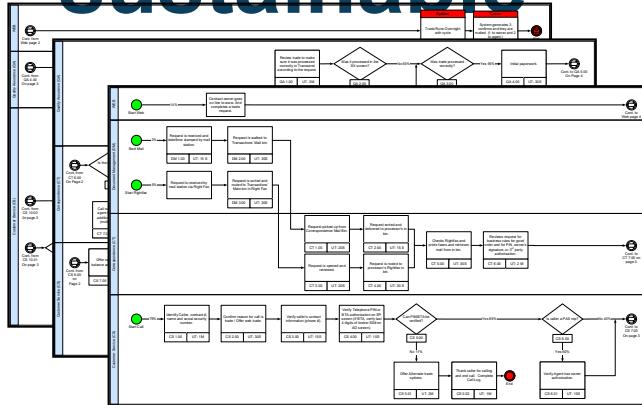


Control – Demonstrate Actual Improvement

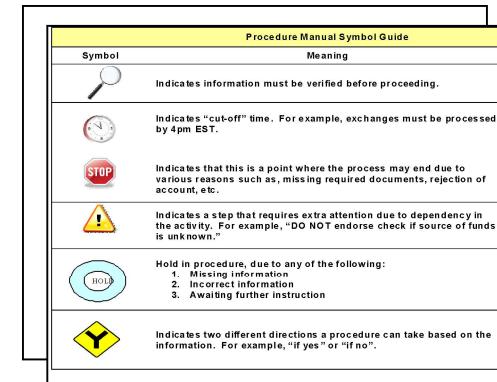
- Prove the process change
 - Use tests from the Analyze phase (from Hypothesis Testing)
 - Test the process output from “before” and “after” the changes you made
- Show the change makes the process better
 - Show that the difference is beneficial for customers and the business
 - This requires your understanding of the business, rather than a tool
 - If you find a chart or tool that helps communicate what is better, use it!

Differences can be significant or helpful or both. Both is the best, but helpful is the key.

Control – Demonstrate improvement is sustainable



Future State Process Map



Standard Operating Procedures



Training Material

Control – standard work

What is Standard Work?

- Work that is done the same way each time, producing the same outcome each time
 - work is standardized
 - the outcome is predictable
- Process consistency
 - stabilizes the process
 - minimizes effects of human variability
- Process improvement
 - provides a baseline, a foundation for improvement
 - encourages scientific method over “tinkering”
- Training
 - eliminates variation in training
 - makes faster training possible

Control plan

CONTROL PLAN						
Process: IT User Provisioning Approved by: TBD Effective Date: TBD						
Metric Name (and location dashboard)	Operational Definition	Data Source(s)	Control Review Owner (and frequency)	Specification	Action Plan (for out of spec.)	Action Owner
Provisioning Accuracy (Provisioning Dashboard)	Result of provisioning = provisioning requested (for each request)	<ul style="list-style-type: none"> SAS 70 Apps: IAM Review by Muthu's team (100% check) Transcend: IAM Review by Muthu's team (100% check) Other Apps: IAM Review of Pre-Audit results by Muthu's team (10% sample) 	<ul style="list-style-type: none"> SAS 70 Apps: Muthu's team (weekly review) Transcend: Muthu's team (weekly review) Other Apps: Muthu's team (quarterly review) 	Provisioning matches request	<ul style="list-style-type: none"> All: record error type SAS 70 Apps: return to provisioner via GPS Transcend: return to provisioner via GPS Other Apps: return to provisioner via GPS 	SA 70 Apps: Muthu Ramiah (Tech Svcs) or delegate Transcend: Muthu's team (Tech Svcs) or delegate Other Apps: Muthu Ramiah (Tech Svcs) or delegate
Request to Provisioned Cycle Time (Provisioning Dashboard)	= Provisioned Date/Time – Request Date/Time (for each request)	<ul style="list-style-type: none"> Time stamps from State Change report Request details from GPS-Listing-All Completed Sub-requests Report 	Gail Nyce/QC team (weekly review)	Cycle Time<4 days	<ul style="list-style-type: none"> Identify and record reason for delay Monthly review of reasons w/ Ops & IT Mgt and agreement on action plan 	Gail Nyce (or delegate)
Open Provisioning Request Aging (Provisioning Dashboard)	= Report Date/Time – Request Date/Time (for each request)	<ul style="list-style-type: none"> Time stamps from State Change report Request details from GPS-Listing-All Incompleted Sub-requests Report 	Gail Nyce/QC team (weekly review)	Age<4 days	<ul style="list-style-type: none"> Identify owner of current process step Identify and record reason for delay Agree to action plan to resolve delay 	Gail Nyce (or delegate)
Approval Cycle Time (Provisioning Dashboard)	= Approval Date/Time – Request Date/Time (for each request)	<ul style="list-style-type: none"> Time stamps from State Change report Request details from GPS-Listing-All Completed Sub-requests Report 	Gail Nyce/QC team (weekly review)	Cycle Time<2 days <small>(revisit tolerances and spec at end of 2011)</small>	<ul style="list-style-type: none"> Identify and record reason for delay Monthly review of reasons w/ Ops Mgt and agreement on action plan 	Gail Nyce (or delegate)
Provisioning Cycle Time (Provisioning Dashboard)	= Provisioned Date/Time – Approval Date/Time (for each request)	<ul style="list-style-type: none"> Time stamps from State Change report Request details from GPS-Listing-All Completed Sub-requests Report 	Gail Nyce/QC team (weekly review)	Cycle Time<2 days <small>(revisit tolerances and spec at end of 2011)</small>	<ul style="list-style-type: none"> Identify and record reason for delay Monthly review of reasons w/ Corp User Admin Team & agreement on action plan 	Gail Nyce (or delegate)

Project storyboard

One page document to summarize problem/opportunity, benefits and improvements



Project Name

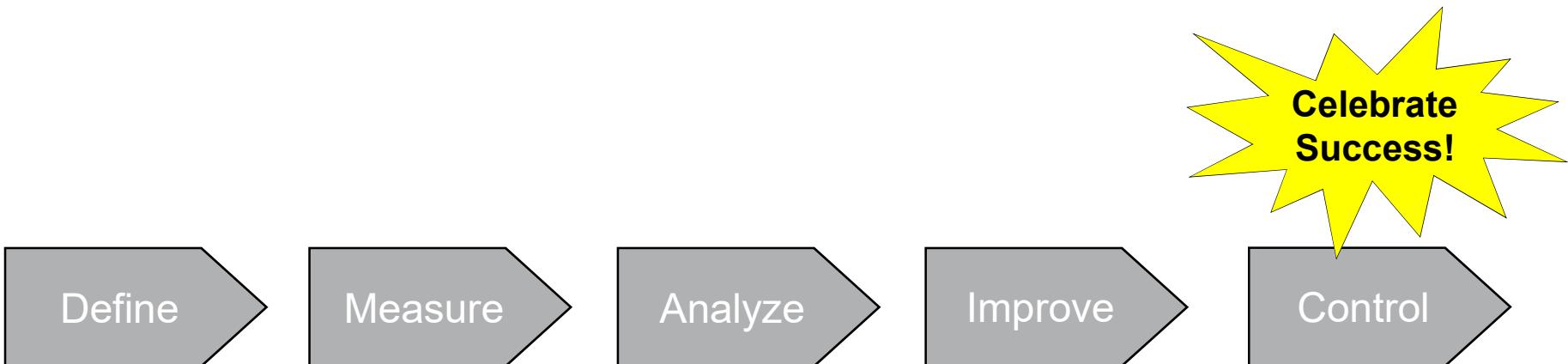
Before	Improvement	After
Background / Problem Statement:	Summary of changes:	Benefit Realization Summary:
Objective/Goal of the project:		
Team:		
Timeline:		

Project handoff

- Meet with Sponsor(s) and the designated manager(s) of the process for business as usual
- Confirm that business as usual resources are ready to receive the process
- Agree on handoff method (cut off vs. run off)
- Agree on time of handoff
- Communicate handoff to all resources and stakeholders
- Monitor the effectiveness of the handoff until Sponsor and new manager(s) agree it has been effectively transitioned

Control takeaways

- Has the team executed a successful roll-out?
- Has the team communicated the improvements / changes?
- Is the Project Sponsor satisfied with the results?
- Has the team implemented a control plan and dashboard?
- Has the Process Owner signed-off on the control plan and assumed responsibility for the process?



CONCLUSION/WRAP UP

CONCLUSION

So now what do I do?

- Go back to your process and identify any customer pain points
- Define measures of success and hold yourself and your team accountable
- Engage others in conversation on what you've learned today
- Use the tools

As a result:

- Your processes will have fewer defects and rework
- Customer Satisfaction will increase
- Your personal development will be enhanced by learning these new, transferrable tools

WRAP UP

Course Survey

- You will receive a survey from our team
- Please provide your feedback – it only helps us improve

Contact Information

Feel free to reach out to any of us with questions or interest in continuing your Lean Six Sigma training

- Eric Dischinger – Director, Business Services & Operational Improvement
- George Hardy – Process Improvement Specialist
- Tracey Lutz – Process Improvement Manager

THANK YOU.



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