

LEANOhio

Define Review

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Define

1. Identify CTQ

2. Develop PAF

3. Visualize the Process

Purpose: To identify and prioritize the business improvement opportunity, define critical customer requirements, document the processes and build effective teams

Deliverables:

Project Approval Form; Project Team – TRAIL; CT Flow Down (CTs); SIPOC; Process map (current process); Project benefits; Project plan major milestones; Data Collection Plan; Data Integrity Audit (if applicable)

Measure

4. Understand Metrics

5. Validate measurement System

6. Determine Process Performance

Purpose: To determine what to measure, manage the measurement data collection, develop and validate measurement systems and determine process performance

Deliverables:

TRAIL Chart – updated; Detailed Process Map; Cause & Effect Matrix; FMEA; Decision Tree; Operational Definitions; MSA Evaluation; Data Collection Plan; Capability Study with Control Charts; Project Status

Analyze

7. ID potential Sources of Variation

8. Characterize the X's

9. Determine Significant X's

Purpose: To determine the root causes, estimate population parameters with confidence intervals and to construct hypothesis about the data and test them to determine significance.

Deliverables:

Data Collection Plan- updated; Hypothesis Testing; Decision Tree; MSA Analysis; Capability Analysis- updated; Executive Summary- updated; TRAIL- updated; Analysis Summary; Control Charts- updated

Improve

10. Establish level for X's

11. Develop Solutions

12. Pilot and Implement

Purpose: To develop and quantify potential solutions, improve/optimize the process, evaluate and select final solution and implement the pilot.

Deliverables:

DOE; Lean Analysis; Simulation; Optimal settings for X's; Executive Summary- updated; TRAIL- updated; Implementation plan; Control Charts- updated; Capability Analysis- updated

Control

13. Evaluate Process Performance

14. Develop Control Plan

15. Transition to Project Owner

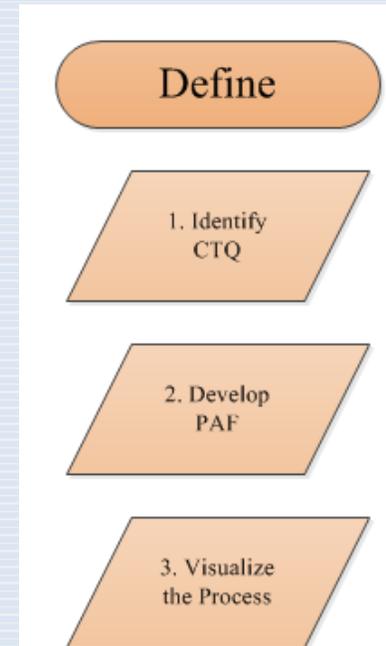
Purpose: Implement final solution, maintain process improvements, ensure new process problems are identified & quickly corrected, disseminate lessons learned. Identify areas for replication & standardization.

Deliverables:

Control Plan; Transition Plan; Capability Analysis- updated; Executive Summary- updated; TRAIL- updated; Control Charts- updated

DMAIC Flow

- Define:
 - Identify Critical to Quality
 - Develop Project Charter
 - Visualize the Process



Define

- Define Purpose: To identify and prioritize the business improvement opportunity, define critical customer requirements, document the processes and build effective teams.

Define Deliverables

- Project Charter (Week One)
- TRAIL Chart (Week One)
- CT Flowdown (Week Two – Monday)
- SIPOC (Week One)
- Process Map (current process) (Week One)
- Project Benefits (Week Two)
- Project Planning (Week Two)
- Data Collection Plan (Week One)
- Data Integrity Audit (Week Two)



LEANOhio Project Charter

Project/Event Title _____
 Project Facilitator _____
 Facilitator Agency _____
 Project Mentor _____
 Project Type: _____
 Project Champion/Sponsor: _____
 Project Agency _____
 Charter Last Updated Date: _____

What is the Process this Project is intended to Improve?

Business Case

Problem/Opportunity Statement:

SCOPE (DEFINE BOUNDARIES)	First step in the process:
	Last step in the process:

Goals and Objectives: What are the three intended outcomes for this Project?

What potential issues could become roadblocks to success for this Project?

Describe any legal or rule-related boundaries that need to be kept in mind.

Who are the primary customers of the process?

Who are the major stakeholders of the process?

Project Charter: Living Document

Definition of the defect (if applicable)				
Performance Metrics: What measures will tell you if you are successful.	Performance Metrics			
	Current	Goal	Final	% Change
Provide any available baseline data relating to the following additional measures - as applicable	Data			
	Current	Goal	Final	% Change
Process Time				
Cost				
Delays				
Error rate/Rework Rate				
Backlog				
Customer Survey Results				
Other				
Intangible Benefits				
Financial Benefits				
Project Status				
Project Champion/Sponsor Sign-Off: I am committed to supporting this project and implementing the teams improvements.				
Initial Approval _____				
Mid-Point Approval _____				
Final Review _____				

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TRAIL Chart

- T – Team Member
- R – Resource
- A – Approver
- I – Informed
- L - Leader

SIPOC

Suppliers	Inputs	Process	Outputs	Customers
Individuals or organizations that provide inputs to the process.	Material, information and/or services that are required by the process to produce the outputs	The step by step method that produces the output, defined at a very high level- only 4-5 steps	Products, information, services and/or decisions that are produced by the process	Those who receive the process output, pay for it or are directly impacted by the process output

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SIPOC: High Level View



- SIPOC: 50,000 Feet View



- Business Process Map: 10,000 Feet View



- Standard Work: 1,000 Feet View

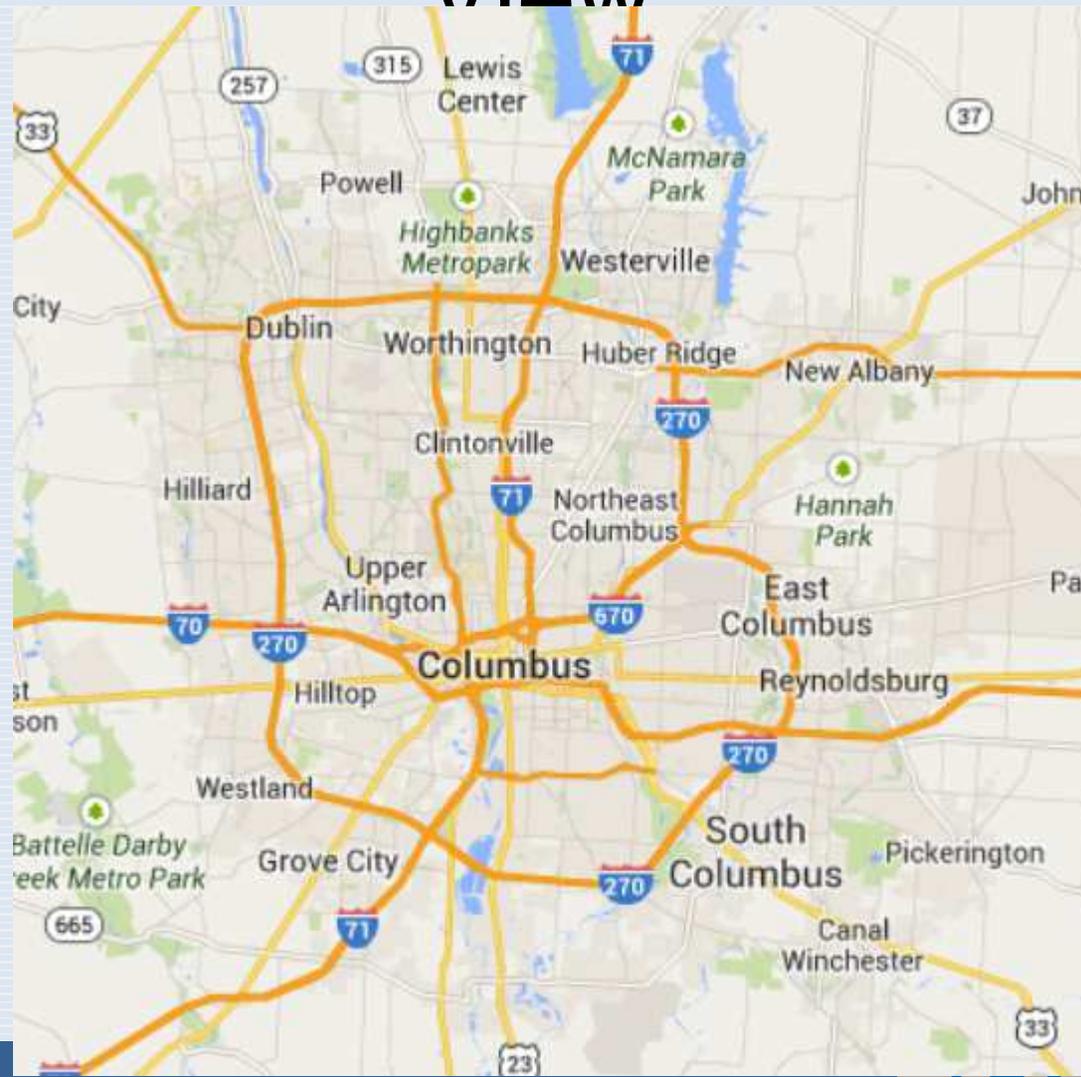
SIPOC – 50,000 Foot View



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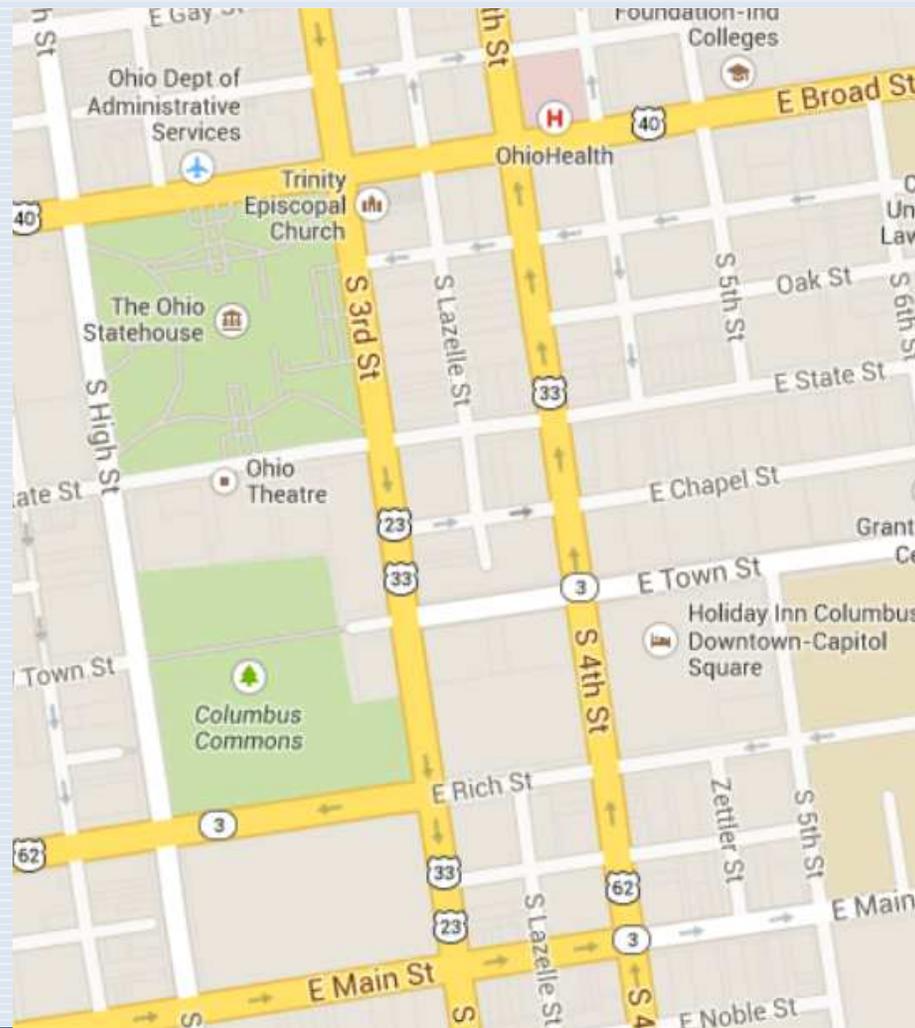
Process Mapping: 10,000 Foot View



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Standard Work – 1,000 Foot View



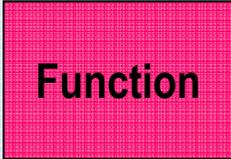
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SIPOC Example



Process Mapping



Function

Different functions of the process



**Beginning
& End Points**

Beginning and end points of the process



Task

Any task / activity where work is performed



**Inspect &
Decision**

Places where information is checked against established criteria (standards) & decision made on what to do next



Delay

Any time information is waiting before the next process or decision (i.e. in-baskets, out-baskets, waiting to be batched)

Process Map Arrows



Used between tasks performed by the same person or area, but no physical movement has occurred



Indicates physical movement of information/product from one function to another



Demonstrates electronic movement of information from one person/function to another

Process Mapping Fundamentals

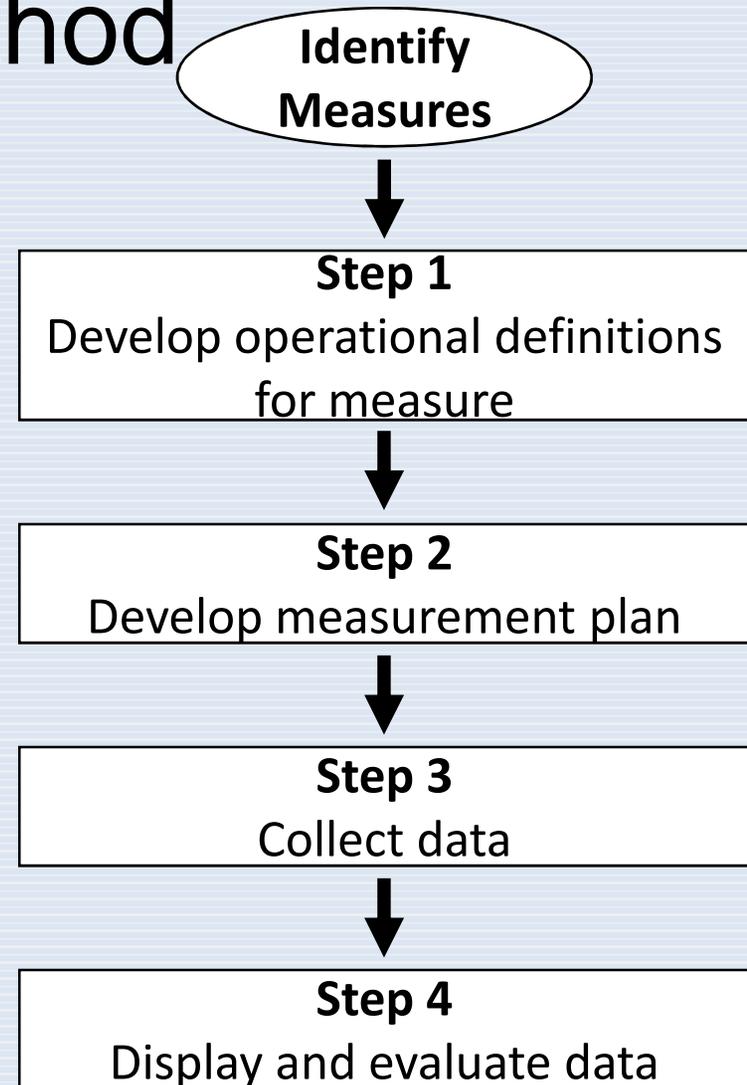
Use your agreed upon scope or SIPOC

Develop and maintain the appropriate level while mapping

1. Start by identifying the functional area that starts the process
2. Detail the tasks, decisions, and delay in each functional area
3. Follow a swim lane model
4. Connect your steps with appropriate arrows
5. Draw in your swim lane lines

Data Collection Method

- Measurement management starts with a data collection methodology.



Operational Definitions

- An operational definition, when applied to data collection, is a **clear**, concise detailed definition of a measure.
- Operational definitions **help ensure that the team does it right the first time** when it comes to data collection.

Sample Data Measurement Plan Form

Performance Measure	Operational Definition	Data Source and Location	Sample Size	Who Will Collect the Data	When Will the Data Be Collected	How Will the Data Be Collected	Other Data that Should Be Collected at the Same Time

How will the data be used?

How will the data be displayed?

Examples:

- ◆ Identification of Largest Contributors
- ◆ Identifying if Data is Normally Distributed
- ◆ Identifying Sigma Level and Variation
- ◆ Root Cause Analysis
- ◆ Correlation Analysis

Examples:

- ◆ Pareto Chart
- ◆ Histogram
- ◆ Control Chart
- ◆ Scatter Diagrams

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Define Tools

- CT Flowdown (Week Two – Monday)
- Project Benefits (Week Two - Thursday)
- Project Planning (Week Two - Wednesday)
- Data Integrity Audit (Week Two - Tuesday)