Lean Six Sigma

Process Mapping
Process Mapping Module
Objectives

Be able to...

- Create Process Maps to visualize all activities in your process, establish boundaries for your project, and identify all inputs (Xs) and outputs (Ys).
- Analyze Process Maps to reduce cycle time, reduce defects, and eliminate bottlenecks and non-value added activities.
What Is a Process?

- A sequence of activities creating outputs of value to a customer:
  - Approving a loan application.
  - Building a software application.
  - Developing a report.
  - Opening a new account.
  - Paying a bill/invoice.
Visualizing the Process Helps Identify...

- What to measure
- Where to measure
- Gaps between strategic focus and actual process
- Projects – to strategically assign Green Belts and Black Belts
- Project/process focus areas

Process mapping may be the most effective improvement tool in the Lean toolbox!
Traditional View of an Organization

Functional Organizations are Driven by Org. Charts

- Leadership
  - Clinical Practices
  - Finance
  - Operations
  - IT
The Process Difference:
Process Organizations are Holistic

- Clinical Practices
- Finance
- Operations
- IT

- New Procedure Certification Process
- End-to-End Patient Cycle (Patient Flow)
- Customer Service Process
- Equipment Servicing Process

Six Sigma Process Mapping
**What Is a Process Map?**

- A graphical representation of a process flow
- It identifies the steps of the process, and the X’s (inputs), and Y’s (outputs) of each step.
- Process maps should be modified to fit the particular needs of any specific process.

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![ACME Order Fulfillment Process Diagram](Image)
The Process Map Should Contain Enough Detail to Enable Effective Analysis

- It should illustrate both the workflow and the organizational interaction
- It should use a common language (symbology) which is understood by everyone
- It should capture all multiple paths, decisions, and rework loops
- It should contain adequate detail
The Process Map Should Address All Types of Tasks

- Operation
- Transportation
- Storage
- Delay
- Inspection
**Process Map Level of Detail**

**Business Process: Strategic**

**Business Processes**

**SIPOC**

**Detailed Process Map**

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**Take Orders**

- Receive customer request
- Review Product Availability
- Explore options for improvement
- Agree delivery date

**S**

**C**

- Sales Forecasting
- Production Planning
- Agree Delivery date
- Order placement

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**Customer Planner**

(Ext.) Customers (Int.) Planners
Process Mapping Outputs

- Value Stream Map
- SIPOC
- Process Maps
  - Top-down
  - Swim Lane
  - Detailed
- Specialized Maps
  - Input/Output Analysis
  - Time/Value Analysis
  - Defect Fall-Out
  - Spaghetti Diagram

Sets the scope of the Value-Stream map

Not all tools are needed for every project!
Top-Down Chart

- A high-level chart that is selectively expanded from the highest level down to the level where the root cause is located.
- A tool to aid in focusing flow-charting effort
  - Do not flowchart a large process to a significant detail: Focus!
Top Down Flowchart – Example

1. Request Prep
2. Unit Review
3. Function Review
4. Internal Sourcing
   - Review Short List
   - Review StarSearch Data
   - Post on JobNet
   - Review JobNet Responses
   - Coordinate With Curr. Sup.
5. External Sourcing
6. Interview
7. Offer
8. New Employee Orientation
9. Choose Job Class
10. Enter Details
11. Enter Close Date
12. Submit to Publish
Swim Lane Map

• Use for large, complex processes when:
  – Multiple departments/functions are involved, including outside the firm.
  – Sequence and time of processes is important (as in cycle time reduction).
  – Can show information and service flows as needed.
  – The top lane is typically process customer.
Swim Lane Map Example

ACME Order Fulfillment Process

Order Entry

1. Generate Order
2. Complete Order
3. Receive Order

Credit Check

4. Check Credit
5. Credit OK?
6. Proceed With Order

Order Fulfillment

7. Enter Order
8. Schedule Production
9. Make Product
10. Assemble Packages
11. Pick and Pack Order
12. Prepare Invoice
13. Order Picked?
14. Send Invoice to Shipping
15. Ship Order
16. Process Payment
17. Address Credit Problem
18. Problem Solved?
19. Stop Order

Customer

Sales

Credit & Invoicing

Production

Shipping

JMP Document

Minitab Project

Six Sigma TV.Net
THE NETWORK FOR SIX SIGMA
Creating a Swim Lane Process Map

1. Gather a team with process knowledge.
2. Use Post-Its on a wall to get initial flow.
3. Validate with those working in the process.
4. Collect necessary process information.
   - Department or individual
   - Process phase or timeframe
   - Start and stop points
   - Activities
1. Identify Departments that are Doing the Work

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<tbody>
<tr>
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<td>Dept 4</td>
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2. Identify Phases or Timeframes

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3. Enter the Start/Stop Points

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# 4. Enter Intermediate Activities

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<td>Work</td>
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<td>Good?</td>
<td>Work</td>
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<td>Dept 5</td>
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<td>stop</td>
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Process Mapping Hints

- Map one process; do not try to map every process.
- Map together, as a team; do not map individual processes and paste these together.
- Map the flow of products through the organization; do not map the organization.
- One person should coordinate the final mapping.
Process Map Validation Methods

• Peer Review
  – By those who know the process.

• Be the Process
  – A team member follows the process from end to end.

• Done by both the core and extended teams, the goal of this step is to review the map while considering the following questions:
  – Does the map represent the way we actually perform the process?
  – Can we identify any additional issues, disconnect, or opportunities? (Be sure not to debate the ones already identified)
  – How long does it take to take us to perform various parts of the process (especially is the project goals or issues are time related).
Contact Us

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- ASKAMBB@SixSigmaTV.Net (Send Data or Questions)
- JGray@SixSigmaTV.Net (Master Black Belt)
- SPhinney@SixSigmaTV.Net (Master Black Belt)
- PartnerwithSixSigmaTV.Net (Create Alliance With Us)
- Training@SixSigmaTV.Net (Inquire About Training From Us)
- Feedback@SixSigmaTV.Net (What Would You Like to See)