Process Improvement: Tools, Tips, and Tricks

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Topics of Discussion

• Process Improvement Primer
• Process Documentation Tools
  • Swimlane Diagram
  • State Diagram
  • SIPOC Chart
  • Value Stream Map
• Our Standards and Practices
• Questions / Answers
Process Improvement Primer: Why Is This Important?

The first rule of any technology used in a business is that automation applied to an efficient operation will magnify the efficiency. The second is that automation applied to an inefficient operation will magnify the inefficiency.

--Bill Gates
Process Improvement Primer: Process Maturity Model

Level 0: No Process
- Individual heroic efforts needed to complete tasks
- Few if any formal procedures or policies
- Participants lack awareness of prior or subsequent steps
- Duplication of effort likely
- Outcomes/results often unpredictable

Level 1: Repetition
- Process is generally adopted by all participants
- Some procedures and policies exist
- Participants are generally aware of prior and subsequent steps
- New participants learn by trial and error
- Results of process are tracked

Level 2: Standardization
- Process is documented and understood by all stakeholders
- Formal procedures and policies documented
- Process training exists for new participants
- Process inputs, outputs, and prerequisites are identified
- Results of process are controlled, and supported by qualitative measures

Level 3: Measurement
- Process measurement points are defined and implemented
- Emphasis is placed on consistency and predictability
- Process can be successfully adapted/extended without loss of quality
- Results of process are measured and monitored by stakeholders

Level 4: Optimization
- Processes continuously improved based on stakeholder feedback supported by quantitative data and measured performance
- Process inputs and outputs predictable and consistent
- Emphasis on reducing processing time and waste
## Process Improvement Primer: Process Maturity Model Summary

<table>
<thead>
<tr>
<th>Process Maturity Level</th>
<th>Focus</th>
<th>Strategy</th>
<th>Anticipated Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 – Optimization</td>
<td>“Let’s get it done better”</td>
<td>Continuous Improvement</td>
<td>Success: Automated</td>
</tr>
<tr>
<td>3 – Measurement</td>
<td>“Let’s figure out how best to get it done”</td>
<td>Team Management</td>
<td>Success: Predictable and Measured</td>
</tr>
<tr>
<td>2 – Standardization</td>
<td>“Let’s get it done”</td>
<td>Team Coordination</td>
<td>Success: Expected</td>
</tr>
<tr>
<td>1 – Repetition</td>
<td>“Get it done again”</td>
<td>Team Heroics</td>
<td>Success: “No Longer a Losing Bet”</td>
</tr>
<tr>
<td>0 – No Process</td>
<td>“Get it done”</td>
<td>Individual Heroics</td>
<td>Success: “A Pleasant Surprise”</td>
</tr>
</tbody>
</table>
Process Improvement Primer: Process Maturity Model – Improvement Tools

Level 0: No Process
Level 1: Repetition
Level 2: Standardization
Level 3: Measurement
Level 4: Optimization

Swimlane Diagram
State Diagram
SIPOC Chart
Value Stream Map
Process Documentation Tools: Swimlane Diagram

(a.k.a. Cross-Functional Diagram in Visio)

• What it does:
  • Documents key process elements including:
    • Sequence of events
    • Responsible groups or entities, and which portions of the process they are responsible for
    • Process phases, where applicable.

• Why it’s good:
  • Clearly identifies functional boundaries
    • Where does communication need to occur?
  • Clearly identifies responsible parties
    • Who needs to do what when
Process Documentation Tools: Swimlane Diagram

Phases / Stages

Responsible Parties
Process Documentation Tools: Swimlane Diagram Example
Process Documentation Tools: Swimlane Diagram Counterexample
Process Documentation Tools:
State Diagram

(a.k.a. Data Flow Diagram in Visio)

• What it does:
  • Documents key phases and statuses of a process
    • Focused on status and flow
    • Statuses / sequences are circles, actions are arrows (opposite of a typical flowchart)

• Why it’s good:
  • Clearly identifies:
    • potential statuses,
    • what actions lead to the next status,
    • what the potential next statuses are
  • Documents non-linear flows
Process Documentation Tools: State Diagram Simple Example
Process Documentation Tools: State Diagram Example

1. On hook - no ringing
2. Lift receiver
3. Off hook - dialing tone
4. Dial number
5. Off hook - dialing
6. Complete dialing
7. Hang up
8. Off hook - ringing tone
9. Phone is answered at other end
10. Hang up
11. Lift receiver
12. Off hook - conversation
13. Person at other end rings off
14. On hook - ringing
15. Your number is dialed
Process Documentation Tools: SIPOC Chart

(Suppliers, Inputs, Process, Outputs, Customers)

• What it does:
  • Documents key inputs and outputs of a process
  • Documents stakeholders

• Why it’s good:
  • Helps identify critical information related to a step in the process
    • What information is necessary at each major step and where it comes from / where it’s going
  • Helps identify “hidden” stakeholders
  • Translates very well to what fields are necessary on a form / view of a form
## Process Documentation Tools: SIPOC Chart Example

<table>
<thead>
<tr>
<th>Suppliers</th>
<th>Inputs</th>
<th>Process</th>
<th>Outputs</th>
<th>Customers</th>
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</thead>
<tbody>
<tr>
<td>Enter Step 1</td>
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<tr>
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<tr>
<td>Suppliers</td>
<td>Inputs</td>
<td></td>
<td>Outputs</td>
<td>Customers</td>
</tr>
</tbody>
</table>
Process Documentation Tools: Value Stream Map

- **What it does:**
  - Documents typical effort / timeframe needed to complete a process
    - Combines results of process analysis with a time study
  - Documents active processing time vs. wait time
    - Value Added vs. Waste

- **Why it’s good:**
  - Identifies key measurement points
  - Identifies bottlenecks / potential bottlenecks
  - Identifies “hidden” process lag time
  - If documented before and after a process improvement project, allows for quantitative measurement of improvement
Process Documentation Tools: Value Stream Map Example

![Value Stream Map Example](image-url)
Process Documentation Tools: Value Stream Map Example
Process Documentation Tools: Value Stream Map Key Elements

- **Cycle Time**
  - How much time does the process take to complete?
  - Differentiate between *wait time* (travel time / lead time / queue time) and *value added time* at each step

- **Travel distance** (for manual processes)
  - How many physical steps?

- **Batch Size**
  - How many get processed at the same time?

- **Efficiency**
  - Calculated as value added time / total time
Our Standards and Practices

- Document the 90+% case
  - Edge cases, “this happened that one time” and “yeah buts” can be indicated on the diagram and explained further in notes
  - These are important to be aware of, and to account for, but not at the expense of overcomplicating the documentation for the majority case

- Keep it simple and clean
  - Use multiple pages if necessary
    - Use connector symbols to bridge between pages or flows
  - Use numbering
    - if you have more than 10-15 boxes on a page
    - If you have detailed notes that go along with the process
Our Standards and Practices

• Document at appropriate levels for complex processes
  • High level
    • Major steps, phases / statuses
    • No decisions (assume “yes”)
  • Mid level
    • Break the major steps down into their components
    • Include decisions
  • Low level
    • If necessary, further break down mid-level steps for clarity
Our Standards and Practices

- Visual documentation is key to communicating process to non-participants
  - Choose the right level of documentation for the right audience
- Documenting the “As-Is” and the “To-Be” is critical to measuring project success
  - The “As-Is” will likely be completely forgotten once improvements are in place, unless it’s documented
  - The difference between the two is ultimately the value we provide – measure, measure, measure, report