VALUE STREAM MAPPING

How to Visualize Work and Align Leadership for Organizational Transformation

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Author of the Shingo Research Award–winning The Outstanding Organization

AND Mike Osterling
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Value Stream Management
Figure 1.1 Granularity of work
ABC Technology, Inc.
Current State Value Stream Map
Name of Value Stream Being Mapped
Demand Rate = XX / Year
Name of Value Stream Champion
Mapping Date

FIGURE 1.2 Basic current state value stream map
FIGURE 1.3 Vertical organization structure versus horizontal reality
Figure 1.4 Basic future state value stream map
Figure 1.5 Cycles of continuous improvement
Setting the Stage and Enabling Success
Figure 2.1 Value stream mapping phases and timing
**Value Stream Mapping Charter**

<table>
<thead>
<tr>
<th>Scope</th>
<th>Accountable Parties</th>
<th>Logistics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Value Stream</strong>: Value stream being improved</td>
<td><strong>Executive Sponsor</strong>: Required: typically VP or C-level</td>
<td><strong>Event Dates &amp; Times</strong>: 3 days typically; consecutive is best; 6 hrs per day minimum; 7 or 8 hrs is best</td>
</tr>
<tr>
<td><strong>Specific Conditions</strong>: What circumstances are included and excluded? (e.g., type of customer, geographic location, etc.)</td>
<td><strong>Value Stream Champion</strong>: If needed—often director or manager level</td>
<td><strong>Base-camp Location</strong>: On-site, ample wall space, quiet/private location</td>
</tr>
<tr>
<td><strong>Demand Rate</strong>: How many times is this done per wk, qtr, mo, or yr?</td>
<td><strong>Facilitator</strong>: Required: skilled, objective person leading the activity</td>
<td><strong>Meals Provided</strong>: Always a nice touch; keeps the team from wandering</td>
</tr>
<tr>
<td><strong>Trigger</strong>: What initiates the process?</td>
<td><strong>Logistics Coordinator</strong>: Not always needed</td>
<td><strong>Briefing Dates &amp; Times</strong>: Aids in consensus building and organizational learning. Typically the last hour of the day.</td>
</tr>
<tr>
<td><strong>First Step</strong>: Task on first process block</td>
<td><strong>Improvement Time Frame</strong>: Typically 3-6 months</td>
<td></td>
</tr>
<tr>
<td><strong>Last Step</strong>: Task on last process block</td>
<td><strong>Boundary &amp; Limitations</strong>: What is the team NOT authorized to change?</td>
<td></td>
</tr>
<tr>
<td><strong>Briefing Attendees</strong>: <strong>required</strong></td>
<td><strong>Briefing Attendees</strong>: <strong>optional</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Briefing Dates</strong>: <strong>required</strong></td>
<td><strong>Briefing Dates</strong>: <strong>optional</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Current State Problems &amp; Business Needs</strong></td>
<td><strong>Mapping Team</strong></td>
<td><strong>Event Dates &amp; Times</strong>: 3 days typically; consecutive is best; 6 hrs per day minimum; 7 or 8 hrs is best</td>
</tr>
<tr>
<td><strong>1</strong>: What’s driving the need for improvement?</td>
<td><strong>Function</strong>: Leadership-heavy</td>
<td></td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><strong>1</strong>: Leadership-heavy</td>
<td></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>2</strong></td>
<td></td>
</tr>
<tr>
<td><strong>4</strong></td>
<td><strong>3</strong></td>
<td></td>
</tr>
<tr>
<td><strong>5</strong></td>
<td><strong>4</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Measurable Target Condition</strong></td>
<td><strong>Function</strong>: Reduce &lt;defined metric&gt; from X to Y (2% improvement).</td>
<td></td>
</tr>
<tr>
<td><strong>5</strong></td>
<td><strong>6</strong>: Reduce &lt;defined metric&gt; from X to Y (2% improvement).</td>
<td></td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><strong>7</strong>: Increase &lt;defined metric&gt; from X to Y (2% improvement).</td>
<td></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>8</strong></td>
<td></td>
</tr>
<tr>
<td><strong>4</strong></td>
<td><strong>9</strong></td>
<td></td>
</tr>
<tr>
<td><strong>5</strong></td>
<td><strong>10</strong>:</td>
<td></td>
</tr>
<tr>
<td><strong>Benefits to Customers</strong></td>
<td><strong>Function</strong>: SMEs that may not be needed full time</td>
<td></td>
</tr>
<tr>
<td><strong>1</strong>: of improvements to the VS?</td>
<td><strong>1</strong>: SMEs that may not be needed full time</td>
<td></td>
</tr>
<tr>
<td><strong>2</strong>:</td>
<td><strong>2</strong></td>
<td></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>3</strong></td>
<td></td>
</tr>
<tr>
<td><strong>4</strong></td>
<td><strong>4</strong></td>
<td></td>
</tr>
<tr>
<td><strong>5</strong></td>
<td><strong>5</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Benefits to Business</strong></td>
<td><strong>Function</strong>: How will internal and/or external customers benefit as a result</td>
<td></td>
</tr>
<tr>
<td><strong>1</strong>: What other benefits will the business or internal customers realize as a result of improvements to the VSM?</td>
<td><strong>Executive Sponsor</strong>: Signature:</td>
<td></td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><strong>Signature</strong>:</td>
<td></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>Date:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>4</strong>:</td>
<td><strong>Date:</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 2.2 Value stream mapping charter**
Figure 2.3 Proper scoping is needed to successfully map the current state.
3

Understanding the Current State
**Figure 3.1** Post-it note after the first value stream walk
Figure 3.2 Acceptable branching on a value stream map
**Figure 3.3** Value stream map progressive build: process block placement
Figure 3.4 Process time versus lead time across the value stream
Figure 3.5 Three places work can accumulate

Total Work-in-Process at Process 2 = 32 items
<table>
<thead>
<tr>
<th>Activity</th>
<th>Negotiate contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function(s)</td>
<td>Sales, Legal, Finance</td>
</tr>
<tr>
<td>Barriers to flow</td>
<td>Batching: Weekly review of contracts</td>
</tr>
<tr>
<td>Number of people in process</td>
<td>☺️ 3</td>
</tr>
<tr>
<td>%C&amp;A</td>
<td>50%</td>
</tr>
<tr>
<td>PT</td>
<td>6 hours</td>
</tr>
<tr>
<td>LT</td>
<td>12 days</td>
</tr>
</tbody>
</table>
**Figure 3.7** How to document multiple downstream customers reporting different %C&As from the same upstream supplier

<table>
<thead>
<tr>
<th>37.5%</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>75% (5)</td>
<td>6 hours</td>
</tr>
<tr>
<td>50% (7)</td>
<td>12 days</td>
</tr>
</tbody>
</table>

- Negotiate contract
- Sales, Legal, Finance
- Batching: Weekly review of contracts

Note: 37.5% indicates the percentage of the process described in the figure.
ABC Technology, Inc.
Current State Value Stream Map
Name of Value Stream Being Mapped
Demand Rate = XX / Year
Name of Value Stream Champion
Mapping Date

Customer

Process 1
Function A
1 item
LT = 1 days
PT = 10 mins.
%C&A = 50%

Process 2
Function B
11 items
LT = 0.5 days
PT = 5 mins.
%C&A = 75%

Process 3
Function C
3 items
LT = 5 days
PT = 120 mins.
%C&A = 85%

Process 4
Function D
7 items
LT = 2 days
PT = 30 mins.
%C&A = 99%

Process 5
Function E
4 items
LT = 1 days
PT = 15 mins.
%C&A = 95%

Figure 3.8 Value stream map progressive build: process details
FIGURE 3.9 Value stream map progressive build: information flow
FIGURE 3.10 Complicated information flow
FIGURE 3.11 Value stream map progressive build: summary timeline
FIGURE 3.12 Parallel process block treatment on the timeline

Process 1
- Function A
  - LT = 2 days
  - PT = 5 mins.
  - %C&A = 90%
- Process 2a
  - Function A
  - LT = 0.5 days
  - PT = 20 mins.
  - %C&A = 50%
  - 10 items
- Process 2b
  - Function A
  - LT = 1 days
  - PT = 10 mins.
  - %C&A = 75%
- Process 3a
  - Function C
  - LT = 3 days
  - PT = 5 mins.
  - %C&A = 67%
- Process 3b
  - Function D
  - LT = 1.5 days
  - PT = 15 mins.
  - %C&A = 99%
- Process 3a
  - Function C
  - LT = 3 days
  - PT = 5 mins.
  - %C&A = 67%
- Process 4
  - Function E
  - LT = 2 days
  - PT = 25 mins.
  - %C&A = 90%
- Process 1
  - Function A
  - LT = 2 days
  - PT = 5 mins.
  - %C&A = 90%

Total LT = 7.5 days
Total PT = 55 mins.
Activity Ratio = 1.5%
Rolled %C&A = 20.1%
Figure 3.13 Multiple timelines
4

Designing the Future State
FIGURE 4.1 PACE chart for setting priorities
**ABC Technology, Inc.**
Future State Value Stream Map
Name of Value Stream Being Mapped
Demand Rate = XX / Year
Name of Value Stream Champion
Mapping Date

**FIGURE 4.2** Basic future state value stream map
Developing the Transformation Plan
### Value Stream Transformation Plan

**Value Stream**: Outpatient Imaging  
**Executive Sponsor**: Allen Ward  
**Value Stream Champion**: Paul Scanner  
**Value Stream Mapping Facilitator**: Dave Parks

<table>
<thead>
<tr>
<th>FS VSM Block #</th>
<th>Measurable Target</th>
<th>Proposed Countermeasure</th>
<th>Exec. Method*</th>
<th>Owner</th>
<th>Planned Timeline for Execution</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Improve quality of referral to 85%</td>
<td>Implement standard work for referral process</td>
<td>KE</td>
<td>Sean Michaels</td>
<td>1-Nov-12</td>
<td>100%</td>
</tr>
<tr>
<td>3,4</td>
<td>Reduce lead time between scheduling and preregistration step to 45 minutes</td>
<td>Cross-train and co-locate work teams</td>
<td>Proj</td>
<td>Dianne Marie</td>
<td>21-Nov-12</td>
<td>75%</td>
</tr>
<tr>
<td>4</td>
<td>Only one check in per patient</td>
<td>Collect copays in Imaging</td>
<td>KE</td>
<td>Ryan Austin</td>
<td>13-Dec-12</td>
<td>50%</td>
</tr>
<tr>
<td>4</td>
<td>Reduce wait time in waiting area by 50%</td>
<td>Balance work / level demand</td>
<td>KE</td>
<td>Dianne Marie</td>
<td></td>
<td>50%</td>
</tr>
<tr>
<td>6</td>
<td>Eliminate 6 hour lead time associated with transcription step</td>
<td>Implement voice recognition technology</td>
<td>Proj</td>
<td>Dave Gerald</td>
<td></td>
<td>50%</td>
</tr>
<tr>
<td>7</td>
<td>Eliminate redundant data entry</td>
<td>Auto populate between PACS and Meditech</td>
<td>Proj</td>
<td>Dave Gerald</td>
<td></td>
<td>25%</td>
</tr>
<tr>
<td>5</td>
<td>Visually managed inventory; no outages or expired items</td>
<td>SS CT supplies area; implement kanban</td>
<td>KE</td>
<td>Michael O'Shea</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>6</td>
<td>Reduce imaging LT to one hour</td>
<td>Value-stream specific radiologists</td>
<td>Proj</td>
<td>Martha Allen</td>
<td></td>
<td>25%</td>
</tr>
<tr>
<td>8</td>
<td>Reduce report delivery LT to 30 minutes</td>
<td>Increase % of physicians receiving electronic delivery</td>
<td>Proj</td>
<td>Martha Allen</td>
<td></td>
<td>0%</td>
</tr>
<tr>
<td>7</td>
<td>Reduce LT at image review to 1 day</td>
<td>Visual metrics and indicators</td>
<td>JDI</td>
<td>Dave Gerald</td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

**Agreement**

<table>
<thead>
<tr>
<th>Executive Sponsor</th>
<th>Value Stream Champion</th>
<th>Value Stream Mapping Facilitator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature:</td>
<td>Signature:</td>
<td>Signature:</td>
</tr>
<tr>
<td>Date:</td>
<td>Date:</td>
<td>Date:</td>
</tr>
</tbody>
</table>

* Execution Method = JDI (Just-do-it), KE (Kaizen Event), or Proj (Project)
Achieving and Sustaining Transformation
Figure 6.1 Nested PDSA cycles
Appendix A
Value Stream Mapping Icons

Figure A.1 Common value stream mapping icons
**ABC Health Care**

Current State Value Stream Map

Imaging Services - Outpatient CT Scans

Demand Rate = 15/day

Value Stream Champion: Paul Scanner

October 16, 2012

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**FIGURE B.1** Current state value stream map for outpatient imaging
ABC Health Care
Future State Value Stream Map
Imaging Services - Outpatient, CT Scans
Demand Rate = 15/day
Value Stream Champion: Paul Scanner
October 17, 2012

**FIGURE B.2** Future state value stream map for outpatient imaging
Appendix C
Purchasing Value Stream
ABC Aerospace
Current State Value Stream Map
Purchasing - Supplies, <$5000, non-recurring
Demand Rate = 615 requisitions/year
Value Stream Champion: Joe Beyer
October 30, 2012

FIGURE C.1 Current state value stream map for supplies purchasing
ABC Aerospace
Future State Value Stream Map
Purchasing - Supplies, <$5000, non-recurring
Demand Rate = 615 requisitions/year
Value Stream Champion: Joe Beyer
October 31, 2012

Figure C.2 Future state value stream map for supplies purchasing
Appendix D

Repair Services Value Stream
**FIGURE D.1** Current state value stream map for repair services

**ACME Service**
Current State Value Stream Map
Repair Services
Demand Rate = 30 calls/day
Value Stream Champion: Fred Techner
August 8, 2013
Figure D.2 Future state value stream map for repair services
APPENDIX E
Shelving Systems Value Stream
FIGURE E.1 Current state value stream map for custom shelving systems
FIGURE E.2 Future state value stream map for custom shelving systems
Appendix F
Software Development
Change Request Value Stream
ABC Software
Current State Value Stream Map
Software Development - Change Request Segment
Demand Rate = 90 change requests/month
Value Stream Champion - Mike Bump
January 7, 2013

FIGURE F.1 Current state value stream map for software development change request
ABC Software
Future State Value Stream Map
Software Development - Change Request Segment
Demand Rate = 90/month
Value Stream Champion - Mike Bump
January 8, 2013

1.0 days
1.0 hrs.
2.5 days
1.0 hrs.
1.3 days
0.2 hrs.
10.0 days
Total LT = 15.0 days
Total PT = 3.4 hrs.
Activity Ratio = 2.8%
Rolled %C&A = 34.7%

Scrum team
LT = 2 hours
PT = 10 mins.
%C&A = 80%

SalesForce
LT = 2.5 days
PT = 1 hrs.
%C&A = 95%

Transition BluePrint & TeamTrack to Jetway

Hold product management review meeting (2x per week)

Define product guidelines

Acct Mgr or Acct Exec.
LT = 2.5 days
PT = 1 hrs.
%C&A = 95%

Deployment team
LT = 1 days
PT = 60 mins.
%C&A = 80%

Discuss needs w/ customer, create opportunity, complete decision tool

Enter internally initiated requests directly into SF

Increase % of requests entered directly by customers

Defined criteria for simple vs complex change

Enter case; link opportunity; complete decision tool (as required)

1550
60%
40%
70%
30%
complex
requests
simple
requests

70%

40%

Jetway

Link SF & JIRA

Scrum master
LT = 10 days
PT = 15 mins.
%C&A = 95%

Kickoff project

8 30
Transition BluePrint & TeamTrack to Jetway

Analyze & improve developer workflow

Value Stream Champion - Mike Bump
January 8, 2013

FIGURE F.2 Future state value stream map for software development change request