Value Stream Mapping
Value Stream

A system of interconnected people, equipment, and entities.
Wherever there is a request and a deliverable, there is a value stream.
What is a Value Stream?

All of the activities required to transform a customer request into a good or service.
Value Stream – New (Custom) Home

ORDER

CUSTOMER

DELIVERY

Design → Lay Found. → Frame → Elect & Plumb → Dry Wall → Interior finishes
Types of Value Streams

- **Transformation** (customer facing)
  - Transforming customer request into good or service

- **Product Development / Design**
  - Concept to manufacturability or service ready

- **Value Enabling**
  - Support processes (e.g., new hire process, procuring new equipment, technology requests)
Houston
We have a problem
Houston

We have many a problems
Poor Customer Experience
Unnecessary Expense
Silo’d thinking; Silo’d behavior
The Customer Doesn’t Benefit from Functional Efficiency

Functional Efficiency ≠ Optimal Value Stream Performance
Lack of Leadership Alignment About Improvement Needs or Priorities
Hidden Problems & Murky Understanding
Value Stream Maps Serve as Visual “Storyboards”

Makes the disconnects and obstacles to flow visible at a macro level

Shows the linkage between material and information flow
MAKE PROBLEMS VISIBLE
Value Stream Maps Help Visualize Problems
VSM Helps Break Down Functional Silos

Core Value Streams

Support Value Streams

External Customer

Internal Customer
Creates Leadership Alignment, Which Accelerates Improvement Cycles
Value Stream Mapping Helps Build Strong Sense of Supplier-Customer Relationships
Where is your focus?

Helps Build External Focus:
What Does the Customer Truly Value?
Proper Value Stream Mapping & Management Generates Significant Business Results

System Efficiency = Optimal Value Stream Performance
Work: Degrees of Granularity

**Macro Perspective**
- Define strategic direction ("what")
- Heavy leadership involvement
- Value Stream Mapping

**Value Stream**
- Process
- Process
- Process

**Step**
- Step
- Step
- Step

**Micro Perspective**
- Identify the tactical "how"
- Heavy frontline involvement
- Metrics-Based Process Mapping
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

Information Flow

Work Flow

Timeline

Total LT = 9.5 days
Total PT = 180 mins.
Activity Ratio = 3.9%
Rolled %C&A = 30.0%
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

1. Customer
   - LT = 0.5 days
   - PT = 30 mins.
   - %C&A = 95%

2. Process 1: Function A
   - LT = 1 days
   - PT = 10 mins.
   - %C&A = 99%
   - IT-1
     - Standard work
     - Cross-train
     - 5 items

3. Process 2: Function C
   - LT = 2 days
   - PT = 120 mins.
   - %C&A = 95%
   - IT-2
     - Modified approvals

   - LT = 0.5 days
   - PT = 30 mins.
   - %C&A = 95%
   - Cross-train

Total LT = 3.5 days
Total PT = 160 mins.
Activity Ratio = 9.5%
Rolled %C&A = 89.3%
### Basic Value Stream – Current vs. Projected Future State Performance Metrics

<table>
<thead>
<tr>
<th>Metric</th>
<th>Current State</th>
<th>Projected Future State</th>
<th>Projected % Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead Time</td>
<td>9.5 days</td>
<td>3.5 days</td>
<td>63.2%</td>
</tr>
<tr>
<td>Process Time</td>
<td>180 minutes</td>
<td>160 minutes</td>
<td>11.1%</td>
</tr>
<tr>
<td>Activity Ratio</td>
<td>3.9%</td>
<td>9.5%</td>
<td>143.6%</td>
</tr>
<tr>
<td>Rolled % Complete &amp; Accurate</td>
<td>30.0%</td>
<td>89.3%</td>
<td>197.7%</td>
</tr>
</tbody>
</table>
Where to start?

1. Define your core and support value streams.
2. Map the value stream.
Where to start?

1. Define your core and support value streams.
2. Map the value stream.
# Activity: Identifying & Scoping Value Streams

**Name of Core Value Stream:**

<table>
<thead>
<tr>
<th>Customer</th>
<th>Trigger</th>
<th>First Process (verb/noun)</th>
<th>Last Process (verb/noun)</th>
<th>Final Deliverable</th>
</tr>
</thead>
</table>

**Name of Support Value Stream:**

<table>
<thead>
<tr>
<th>Customer</th>
<th>Trigger</th>
<th>First Process (verb/noun)</th>
<th>Last Process (verb/noun)</th>
<th>Final Deliverable</th>
</tr>
</thead>
</table>

- **Customer** – who initiates the request and receives good or service?
- **Trigger** – what signal initiates the value stream?
- **First Process** – the first activity that takes place (what does the trigger initiate?)
- **Last Process** – the ending point of the value stream; the last activity
- **Final Deliverable** – what is the “finished product” that the customer receives?
Where to start?

1. Define your core and support value streams.
2. Map the value stream.
Activity: Step 1

Define who the internal or external customer is for the value stream you’ve chosen.
Define the first four processes (handoffs) in the value stream you chose.
Key Performance Metrics

Review
Contract
Finance & Legal

% Complete & Accurate
80%
15 mins
2 days
Process Time
Lead Time
Key Metric: Percent Complete & Accurate (%C&A)

%C&A = % of incoming work that’s “usable as is”; no need for rework:

- **Correcting** information or material that was supplied
- **Adding** information that should have been supplied
- **Clarifying** information that should have or could have been clearer
Activity: Step 3

Add Process Time, Lead Time, and %Complete & Accurate to the process blocks.
Common current state findings

- Disconnected processes
- Incomplete & unclear information
- Uneven workloads
- Wasteful activities
- Long delays
- Ineffective outcomes
- Excessive costs
- Poor customer experience
From Current State to Future State Design

• Future state design – minimum necessary for maximum outcomes
  • Eliminate delays
  • Increase information quality
  • Involve the right people at the right time
  • Improve effectiveness of outcomes
  • Improve customer experience

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Value Stream Mapping Activity
Phases and Timing

Prepare
Understand Current State
Design Future State
Develop Transformation Plan
Execute Transformation Plan

Repeat

4 Weeks Prior to Mapping
Three Consecutive Days
Following Mapping

Repeat
## Value Stream Mapping Charter

### Scope

<table>
<thead>
<tr>
<th>Value Stream</th>
<th>Accountable Parties</th>
<th>Logistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital equipment</td>
<td>Executive Sponsor: Allen Ward</td>
<td>Event Dates &amp; Times: July 24-26, 2013 8:00 am - 5:00 pm</td>
</tr>
<tr>
<td>Engineer to order, requires both hardware &amp; software customization</td>
<td>Value Stream Champion: Nancy Little</td>
<td>Base-camp Location: Surf's Up - Room A</td>
</tr>
</tbody>
</table>

### Specific Conditions

<table>
<thead>
<tr>
<th>Demand Rate</th>
<th>True ETR to submit RFQ</th>
<th>Facilitator: Dave Parks</th>
<th>Event Dates &amp; Times: July 24, 25, &amp; 26 4:00-5:00 pm</th>
</tr>
</thead>
</table>

### Event Dates & Times

<table>
<thead>
<tr>
<th>Event Dates &amp; Times</th>
<th>Start Time: 7:00 am - End Time: 5:00 pm</th>
</tr>
</thead>
</table>

### Current State Problems & Business Needs

<table>
<thead>
<tr>
<th>Current State Problems &amp; Business Needs</th>
<th>Mapping Team</th>
<th>On-Call Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desire to stay ahead of the competition &amp; deepen customer loyalty.</td>
<td>1. Sales, Director: Sean Michaels</td>
<td>1. Planning / Purchasing, Planner: Lourdes Dwyer</td>
</tr>
<tr>
<td>Forecasted growth of 15% for next fiscal year.</td>
<td>2. IT, Director: Diana Marie</td>
<td>2. Production Supervisor: Tom St. James</td>
</tr>
<tr>
<td>Unclear &amp; incorrect information flowing through value stream.</td>
<td>3. Finance, Controller: Dave Gerald</td>
<td>3.</td>
</tr>
<tr>
<td>RFQ lead time = 2 weeks; PO to software dev lead time = 5 weeks</td>
<td>4. Scrum Master: Ryan Austin</td>
<td>4.</td>
</tr>
<tr>
<td>Competition's RFQ LT is 1 wk; PO to delivery is 4 wks</td>
<td>5. Engineering, Vice President: Nancy Little</td>
<td>5.</td>
</tr>
<tr>
<td>Reduce RFQ LT from 2 weeks to 3 days (70% improvement).</td>
<td>7. Customer Service, Manager: Danny Tran</td>
<td>7.</td>
</tr>
<tr>
<td>Reduce PO to software dev LT from 5 wks to 3 wks (40% improvement)</td>
<td>8. Customer (contract manufacturer): JR Hunt</td>
<td>8.</td>
</tr>
<tr>
<td>Improve quality of information flowing throughout value stream.</td>
<td>9.</td>
<td>9.</td>
</tr>
<tr>
<td>Faster delivery; less hassle; less cost.</td>
<td>10.</td>
<td>10.</td>
</tr>
</tbody>
</table>

### Benefits to Customers & Business

<table>
<thead>
<tr>
<th>Benefits to Customers &amp; Business</th>
<th>On-Call Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faster delivery; less hassle; less cost.</td>
<td>1. Planning / Purchasing, Planner: Lourdes Dwyer</td>
</tr>
<tr>
<td>Better working relationships between sales, estimating &amp; engineering.</td>
<td>2. Production Supervisor: Tom St. James</td>
</tr>
<tr>
<td>Freed capacity to absorb additional business w/o increasing staff.</td>
<td>3.</td>
</tr>
</tbody>
</table>

### Relevant Data

<table>
<thead>
<tr>
<th>Relevant Data</th>
<th>Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales effectiveness: RFQ conversion rate.</td>
<td>Executive Sponsor: Signature: Date:</td>
</tr>
<tr>
<td>Financial: Estimate-to-actual cost comparison.</td>
<td>Value Stream Champion: Signature: Date:</td>
</tr>
<tr>
<td>Operational: LT in segments (RFQ to quote; PO to development).</td>
<td>Facilitator: Signature: Date:</td>
</tr>
</tbody>
</table>

**Who?** Value Stream Champion: Nancy Little

**Why?**

1. Desire to stay ahead of the competition & deepen customer loyalty.
2. Forecasted growth of 15% for next fiscal year.
3. Unclear & incorrect information flowing through value stream.
4. RFQ lead time = 2 weeks; PO to software dev lead time = 5 weeks
5. Competition's RFQ LT is 1 wk; PO to delivery is 4 wks

**Improvement Time Frame**
December 31, 2013.

**Base-camp Location**
Surf’s Up - Room A

**Facilitator**
Dave Parks

**Executive Sponsor**
Allen Ward

**Facilitator**
Dave Parks

**Executive Sponsor**
Allen Ward

**Value Stream Champion**
Nancy Little

**Scrum Master**
Ryan Austin

**Customer Service, Manager**
Danny Tran

**Customer (contract manufacturer)**
JR Hunt

**Sales, Director**
Sean Michaels

**IT, Director**
Diana Marie

**Finance, Controller**
Dave Gerald

**Engineering, Vice President**
Nancy Little

**Manufacturing, Director**
Ambreen Motiwala

**Customer Service, Manager**
Danny Tran

**Customer (contract manufacturer)**
JR Hunt

**Sales, Director**
Sean Michaels

**IT, Director**
Diana Marie

**Finance, Controller**
Dave Gerald

**Engineering, Vice President**
Nancy Little

**Manufacturing, Director**
Ambreen Motiwala

**Customer Service, Manager**
Danny Tran

**Customer (contract manufacturer)**
JR Hunt

**Sales, Director**
Sean Michaels

**IT, Director**
Diana Marie

**Finance, Controller**
Dave Gerald

**Engineering, Vice President**
Nancy Little

**Manufacturing, Director**
Ambreen Motiwala

**Customer Service, Manager**
Danny Tran

**Customer (contract manufacturer)**
JR Hunt
Socializing the Charter

*Conversation*, not merely an email attachment.
To the *entire workforce* who will be affected by change.
Adjust the charter if new discoveries or concerns surface.
Value Stream Mapping Activity
Phases and Timing

Prepare
Understand Current State
Design Future State
Develop Transformation Plan
Execute Transformation Plan

Repeat

4 Weeks Prior to Mapping

Three Consecutive Days

Following Mapping

43
Daily Leadership Briefings

#1 – Reduce resistance
#2 – Build consensus
#3 – Gain commitment
## Value Stream Transformation Plan

**Product Y**

<table>
<thead>
<tr>
<th>Executive Sponsor</th>
<th>Value Stream Champion</th>
<th>Value Stream Mapping Facilitator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jim McMahon</td>
<td>Sally Brooks</td>
<td>Karen Martin</td>
</tr>
</tbody>
</table>

**Scheduled Review Dates**

2/10 + bi-weekly Thu 10 am

### Value Stream

**Date Created:** 9/2/2014

---

### Kaizen Burst #1

<table>
<thead>
<tr>
<th>Improvement Objective / Hypothesis</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>1</td>
<td>Create procedure/train GS service engineers to properly feedback suggestions to engineering</td>
<td>PROJ</td>
<td>Steve</td>
<td>J F M A M J J A S O N D</td>
<td>0%</td>
</tr>
<tr>
<td>2</td>
<td>Create bulletin re: standardized headplate design to eliminate flange orientation</td>
<td>PROJ</td>
<td>Steve</td>
<td>J F M A M J J A S O N D</td>
<td>100%</td>
</tr>
<tr>
<td>3</td>
<td>Create visual &quot;milestone&quot; timeline to educate customers</td>
<td>KE</td>
<td>Bruce</td>
<td>J F M A M J J A S O N D</td>
<td>50%</td>
</tr>
<tr>
<td>4</td>
<td>Define technical info needed from customer and when</td>
<td>KE</td>
<td>Bruce</td>
<td>J F M A M J J A S O N D</td>
<td>50%</td>
</tr>
<tr>
<td>5</td>
<td>Socialize new criteria for engineering, quality, &amp; purchasing involvement.</td>
<td>PROJ</td>
<td>Jessie</td>
<td>J F M A M J J A S O N D</td>
<td>100%</td>
</tr>
<tr>
<td>6</td>
<td>Revise standard Ts &amp; Cs to incorporate time limit for customer approval for final payment.</td>
<td>PROJ</td>
<td>Sally</td>
<td>J F M A M J J A S O N D</td>
<td>100%</td>
</tr>
<tr>
<td>7</td>
<td>Final print &amp; plot (format space, strip to, etc.); notify customer re missing info and due date</td>
<td>KE</td>
<td>Jessie</td>
<td>J F M A M J J A S O N D</td>
<td>0%</td>
</tr>
<tr>
<td>8</td>
<td>Create criteria for LOI acceptance</td>
<td>PROJ</td>
<td>Mike</td>
<td>J F M A M J J A S O N D</td>
<td>100%</td>
</tr>
<tr>
<td>9</td>
<td>Add initial project release in SF</td>
<td>JDI</td>
<td>Jessie</td>
<td>J F M A M J J A S O N D</td>
<td>50%</td>
</tr>
<tr>
<td>10</td>
<td>Resocialize existing customer-requested CO procedure</td>
<td>PROJ</td>
<td>Steve</td>
<td>J F M A M J J A S O N D</td>
<td>80%</td>
</tr>
<tr>
<td>11</td>
<td>One piece engineering flow</td>
<td>PROJ</td>
<td>Steve</td>
<td>J F M A M J J A S O N D</td>
<td>10%</td>
</tr>
<tr>
<td>12</td>
<td>Move to one release (pump &amp; systems)</td>
<td>PROJ</td>
<td>Bob</td>
<td>J F M A M J J A S O N D</td>
<td>0%</td>
</tr>
<tr>
<td>13</td>
<td>Revise proposal template to limit time to 4 revisions</td>
<td>JDI</td>
<td>Jessie</td>
<td>J F M A M J J A S O N D</td>
<td>100%</td>
</tr>
<tr>
<td>14</td>
<td>Standardize WPS/PQR from suppliers</td>
<td>PROJ</td>
<td>Marcia</td>
<td>J F M A M J J A S O N D</td>
<td>25%</td>
</tr>
<tr>
<td>15</td>
<td>Create commodity management team &amp; supplier SLAs</td>
<td>PROJ</td>
<td>Tom</td>
<td>J F M A M J J A S O N D</td>
<td>30%</td>
</tr>
<tr>
<td>16</td>
<td>Create trigger to release (BOMs) for purchase</td>
<td>KE</td>
<td>Marcia</td>
<td>J F M A M J J A S O N D</td>
<td>50%</td>
</tr>
<tr>
<td>17</td>
<td>Create pull signal for invoicing</td>
<td>PROJ</td>
<td>Sally</td>
<td>J F M A M J J A S O N D</td>
<td>50%</td>
</tr>
</tbody>
</table>

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### Agreement

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<th>Executive Sponsor</th>
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<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)
Key Success Factors for Value Stream Improvement & Ongoing Management

• Frequent review of transformation plan progress (& obstacle removal when necessary)
• Clear value stream manager/owner/champion
• Defined value stream KPIs (key performance indicators)
• Frequent KPI review & continuous improvement
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info@ksmartin.com

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