What is Value Stream Mapping?

Value Stream Mapping (VSM) is a Lean management method used to visualize, analyze, and improve the flow of materials and information required to deliver a product or service to a customer. It helps identify waste, bottlenecks, and opportunities for streamlining operations.

Purpose of VSM

- **Visualize the current process** from start to finish

- **Identify non-value-added activities (waste)**

- **Improve flow** and increase efficiency

- **Create alignment** across teams and departments

- **Prioritize impactful changes**

Key Components

- **Customer Requirements:** What the end-user expects

- **Process Steps:** All actions (value-adding and non-value-adding) taken to deliver the product or service

- **Material Flow:** Movement of physical goods

- **Information Flow:** How data, instructions, and communications travel

- **Timeline & Lead Time:** Total process time and breakdown of value-added vs. non-value-added time

- **People & Resources:** Who performs what task and with what tools

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Steps to Create a VSM

1. **Define the scope** – Choose the product or process to map

2. **Map the current state** – Record all steps as they exist today

3. **Identify waste** – Look for delays, overproduction, handoffs, rework, etc.

4. **Design the future state** – Envision a more efficient, streamlined process

5. **Develop an action plan** – Assign tasks, timelines, and metrics for improvement

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Common VSM Symbols

Symbol	Meaning
Process Box	A step or activity in the process
Arrow	Flow of material or information
Clock	Cycle time or lead time
Data Box	Process metrics (e.g., uptime, # of operators)
Inventory	Accumulated stock or delay

Benefits of VSM

- Clear view of end-to-end operations
- Improved cross-functional communication
- Reduced lead times and increased throughput
- Better resource allocation
- Foundation for continuous improvement

When to Use It

- Starting a Lean transformation
- Experiencing delays or inefficiencies
- Scaling operations
- Launching a new product/service
- Improving customer experience

Generic Fulfillment Value Stream Map

CUSTOMER
Demand: 500/day
Takt: 57.6 sec

Order → Forecast → Schedule → Pick List → Ship Order → Track → Replenish →

SUPPLIER
Lead Time:
3-5 days

ORDER ENTRY	INVENTORY PLANNING	PICKING	PACKING	QUALITY CHECK	SHIPPING	DELIVERY
CT: 2 min	CT: 5 min	CT: 15 min	CT: 8 min	CT: 3 min	CT: 10 min	CT: 24-48 hrs
Setup: 0	Setup: 0	Setup: 2 min	Setup: 1 min	Setup: 0	Setup: 5 min	Setup: 0
Uptime: 95%	Uptime: 98%	Uptime: 85%	Uptime: 90%	Uptime: 99%	Uptime: 92%	Uptime: 95%

WIP: 50 units
2.4 hrs

WIP: 75 units
3.6 hrs

WIP: 25 units
1.2 hrs

WIP: 100 units
4.8 hrs

Timeline:

Value Added

Non-Value Added

KEY METRICS

Total Lead Time:	3.5 days
Value Added Time:	43 minutes
Non-Value Added Time:	4.6 days
Process Efficiency:	0.6%
First Pass Yield:	92%
Order Accuracy:	98.5%
On-Time Delivery:	94%

IMPROVEMENT OPPORTUNITIES

• Reduce inventory between processes
• Implement pull system (Kanban)
• Standardize picking routes
• Automate order entry process
• Cross-train workers for flexibility
• Implement 5S in warehouse
• Real-time tracking system

FUTURE STATE GOALS

• Lead Time: 1.5 days (57% reduction)
• Process Efficiency: 2.5%
• First Pass Yield: 98%
• On-Time Delivery: 99%
• Inventory Turns: 12x per year
• Order-to-Ship: Same day
• Zero defects goal

LEGEND

→ Information Flow
▶ Material Flow
◭ Inventory
■ Value Added
■ Non-Value Added