

Lean Poster Series #12

Value Stream Map



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What is Value Stream Map?

A Value Stream Map is used to analyze and design the flow of materials (or inventory) and information required to bring a product or service to a consumer. Although value stream mapping is often associated with manufacturing, it is also used in logistics, supply chain, software development, product development, and administrative and office processes.

When is a Value Stream Map used?

Value Stream Maps are usually created in the Define and Measure phases to better understand the current value stream and to provide a basis for analysis and improvement, and in the Improve and Control phases as part of the designed values stream.



Stakeholder Analysis – current vs. target rating

- A simple tool for visualizing the ‘door-to-door’ flows within an organization
- Focuses lean efforts on improving the whole value chain to establish flow, eliminate waste and add value
- Captures material movements and information flows in one ‘current state’ picture
- Provides step-by-step approach to creating an ideal ‘future state’

Benefits

- Provides a powerful communication tool and brings Lean concepts and tools to life
- Helps to visualize more than a single operation (e.g. data entry, case evaluation, etc.)
- Helps to see sources of waste and process constraints
- Focuses improvement activities
- Shows the link between information flow and material and job flow

Stages of a Value Stream Map

Select a Product / Service

Select a Product or Service, or a Product/Service Family. A family is a group of products/services that pass through similar processing steps and common equipment. In looking at product or service families, it's important to note the number of different products or services that are included in the family, the customer demand for each, and the frequency of customer orders for each.

Future State Map

Having constructed the current state value stream map, analysis needs to take place to identify the parameters of the future state map. In this, our aim is to make the process as Lean as possible.

- Get one process to provide only what the next process needs when it needs it
- Link all processes from the final customer back to initial input
- Develop continuous flow wherever possible

Action Plan

The action plan is the basis to get from the current state to the future state, and represents a control mechanism to check and adjust against.

- Break the implementation into steps – focus on the pacemaker area first
- Create an action plan with clear steps, responsibilities and measurable goals
- Monitor progress
- Take corrective action and re-plan as necessary

Current State Map

The second stage is constructing the current state map, where we draw the as-is state.

1. Map each service or process using a box. Start at the customer end and work backwards.
2. Collect process data for each box or step via the following measures:
 - C/T (cycle time)
 - Value added/non value added ratio
 - C/O (changeover time)
 - Uptime (%)
 - Inventory
 - Del. cycle time
 - Reorder level
 - Cost
3. Note the location and amount of inventory between steps.
4. Map the supply process e.g. suppliers, production control, customer.



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Value Stream Map Example

In the center is the Production Control that coordinates the process. The process flow is shown at the bottom by Process shapes linked by Push arrows. Goods are supplied by the Supplier on the left hand side and products are delivered to the customer on the right hand side. The data captured for each process:

- Cycle Time (or C/T) which is the total time to complete the process
- Changeover Time (or C/O) which is the time to changeover (for example to convert a setup for another product line)
- Uptime which is the actual production time of a machine to the availability time

At the bottom the timeline calculates the Production Lead Time (PLT or total end-to-end process time) and Total Value Adding Time (or Total Process Time; the sum of all cycle times).



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