

# Value Stream Mapping

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## What is a Value Stream Map?

A value stream map is a comprehensive visual representation of the customer's experience in a business process from start to finish. In Lean philosophy, "value" is defined as the product, service, or deliverable that the customer wants from a business process. Creating a value stream map helps process participants understand what aspects of their process produce value for their customer. When process participants can see which aspects of their process produce value, they are able to follow value through a process or system, regardless of which division "owns" the value-added steps. Teams then use the value stream map to identify areas where they can eliminate unnecessary steps or bloated processes, ultimately aiming to improve processes to the point where a larger share of the process consists of value-added steps that improve customer experience.<sup>1</sup>

At Toyota, a traditional value stream map includes visual representations of the flow of materials and information in a process. City Performance has simplified the traditional approach. Instead of mapping out all inputs and outputs and identifying information flows, participants create a map that visualizes the steps, time each step takes, and value-added, non-value added, and legally required steps in the process.

The Value Stream Mapping session (VSM) typically lasts a full working day. All key process participants, including front-line employees, managers, primary customers, and secondary customers should participate in the session, although some participants, such as the customers, may not need to be present for the entire session. The successful execution of the VSM requires careful planning and a keen understanding of the stakeholders involved in the process. It is important to engage the customer in at least a portion of the VSM, as the team must determine value from the customer's perspective.

## When should I use it?

- When resolving the problems in the process requires a collaborative approach with multiple stakeholders. Factors that might require a VSM include:
  - The process spans more than one work unit and no one person sees the entire process
  - Communication or empathy between process participants is a problem
  - You believe that an upstream part of the process is causing a downstream problem
  - Broad buy-in is required to agree on which problems to focus on
  - Problems are complex or poorly understood
- When customers (and/or staff) are frustrated with a process
- When process participants are lacking an end-to-end view of the process or don't understand what one another are doing
- When the purpose behind a process (value) has become lost amid many administrative steps

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<sup>1</sup> City Performance (CP) typically utilizes the value stream map in its large-scale partnerships to guide the partnering division in selecting smaller, painful parts of the process as the focus of improvement. The division then focuses on analyzing and improving the painful parts of the process through Rapid Improvement Events (RIEs). See the Rapid Improvement Event reference guide for more information on RIEs.

# Value Stream Mapping

- When you have a team that expresses a broad frustration with a process overall, e.g. “hiring someone in the City is impossible.”
- When you’re able to dedicate several months to gathering the requisite process time data

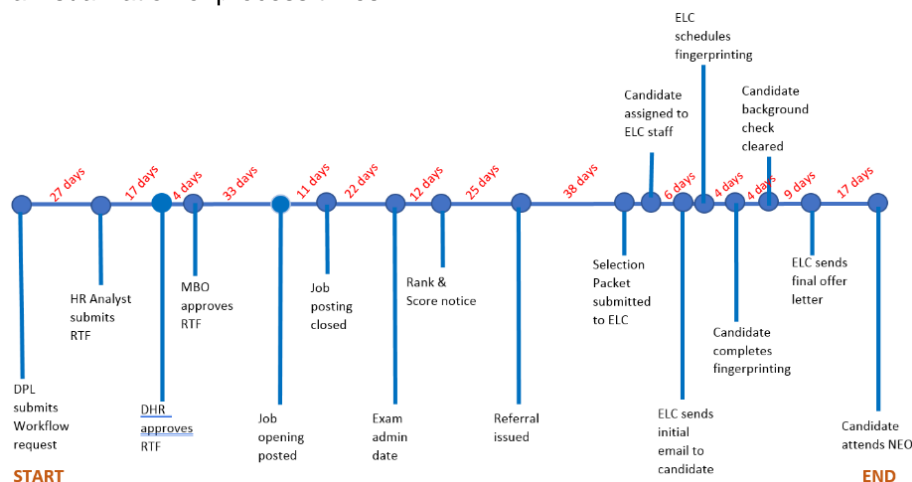
## Who can be the “Lean facilitator?”

Any person who works directly on the process or is familiar with the process can be a Lean facilitator. If the facilitator does not work directly on the process, the facilitator will need to commit to fully understanding all aspects of the process via gemba walks, building relationships, and listening carefully to the team involved in the mapping process. While all Lean facilitators should be conducting these essential tasks prior to the VSM, these elements become especially important when facilitators do not work directly in the unit(s) represented in the VSM. Spending time building relationships and setting up gemba walks demonstrates a level of commitment to understanding the process and allows the facilitator to build trust with the team.

## How do I facilitate it?

### Before the event:

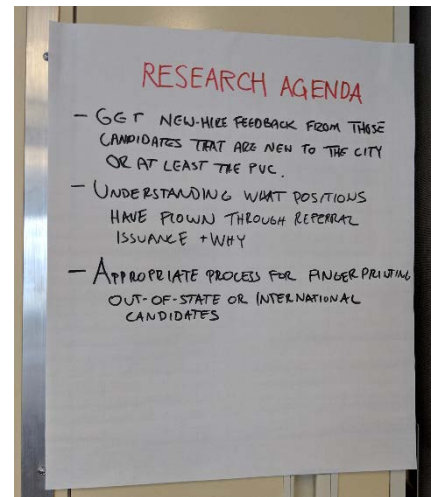
- 1. Build relationships with the team and relevant stakeholders.** At least one of the Lean facilitators should meet with every person on the VSM team before the VSM session. These meetings can be helpful for understanding team dynamics, learning the sequential order of process steps, and uncovering challenges and frustrations in the process. Documenting learnings from these meetings in the form of written notes or a physical process map (meant only for internal use!) can help the Lean facilitator uncover confusing, ambiguous areas of the process before the division’s team builds their own map during the VSM.
- 2. Gather relevant data.** In addition to building relationships with stakeholders, the Lean facilitator (and other team members, if possible), should make every effort to conduct gemba walks before the VSM session. A gemba walk is a method of observation where staff go to the location where a process is happening and observe it in real time. Lean facilitators may find that the process they’re focusing on happens over the span of several months or there are several phases of the process that happen simultaneously, making it difficult to observe the whole process all at once. If this is the case with your process, break out your process into several distinct chunks and dedicate separate time to observing each piece of the process. See our Gemba Walk Reference Guide for more information on planning your own gemba walk. In addition to Gemba Walks, the Lean facilitator should work with team members to gather objective data about process time, including data from systems. See below for an example of a visualization of process times.



# Value Stream Mapping

## During the event

3. **Kickoff, define the problem, and set expectations.** The sponsor should discuss their expectations for engagement in and results from the VSM. They should assert that they're trusting the details to staff. The facilitator and team lead should set clear expectations for roles and responsibilities, group participation, and attendance.
4. **Capture ideas in the research agenda and idea incubator.** During the event, hang two pieces of chart paper on the wall – one with the title “Research Agenda” and one with the title “Idea Incubator.” Write down ideas or insights that need additional research outside of the VSM on the “Research Agenda” paper. Write possible solutions that come out of conversations during the VSM on the “Idea Incubator” sheet. Use these tools to keep the team on track. When a team member has an idea, rather than spend time discussing the idea as a group, ask them to write their idea on the “Idea Incubator” sheet.
5. **Just-in-time training.** You can optionally provide a small training module at the start of the event (e.g., “Who is the customer?”) or dedicate time at the start of a tool to train on it first (e.g., a brief process mapping overview before diving in).
6. **Define the customer and define value.** It's important for the team to have a shared understanding of who the customer is in the process and what the “value” of the process is. Facilitate a conversation with your team by asking: who is the customer in our process? Then, to get clear on the value-added steps, facilitate a conversation about value with your team by asking the question: what does the customer want in our process?
7. **Gather information about the current state of the process.** The Lean facilitator can choose to include all or several of these aspects in the “current state” discussion in the business process on which they are focusing.
  - o Gemba walks: while it may be more time-efficient to conduct gemba walks prior to the VSM, the Lean facilitator can conduct Gemba walks during a portion of the VSM with the entire team.
  - o Time studies: the Lean facilitator can lead the group through a discussion of the results of the process time analysis conducted prior to the VSM session. Discussing processing time data provides valuable context and checks on assumptions for the team.
  - o Voice of the Customer: the Lean facilitator coordinates with real life customers in the process and asks them to come into the session to share their feedback on the process. Prior to the customer's arrival, the Lean facilitator should lead a discussion with the team to select the appropriate questions to ask the customers.
8. **Create the value stream map.** Have the team execute the following steps:



# Value Stream Mapping

- **Map the process steps.** If the process has multiple steps or sub-processes happening simultaneously, consider using a swim lane map using post-it notes. For more information on mapping the process, see our Process Mapping Reference Guide.
- **Write time estimates on to the map.** If the team has data on average process time between steps, they can write the process times for specific pieces of the process directly on to the process map. If

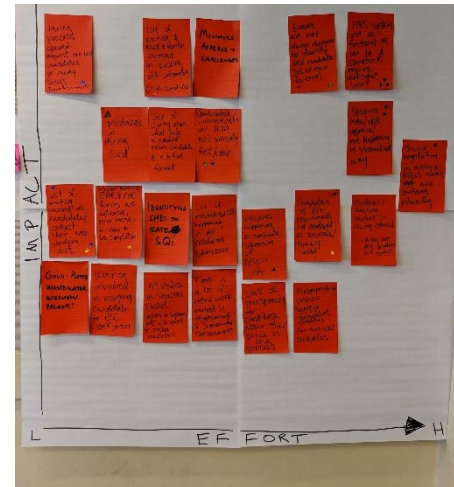


they do not have this data, the Lean facilitator can lead the group through estimating the processing time for specific phases of the process.

- **Determine which process steps are value-add (VA), non-value-add (NVA), or legally required (LR).** Add stickers to identify VA, NVA, and LR steps to your post-its.
9. **Debrief with the team.** Use the completion of the value stream map exercise as a point of reflection for the group. What did they learn from doing the exercise? What jumps out at them?
10. **Facilitate the team to select key pain points in the process.**

City Performance has experimented with several different methods to facilitate the selection of pain points, but across all experimented agendas, the team has followed the same general model:

- **Start by having the team write their key process pain points and use the impact/effort matrix to select their process priorities.** Introduce the impact/excitement matrix. Have the team take their pain points and place them on the impact-effort matrix. Facilitator should then summarize the categories – these are the pain points we want to propose prioritizing. See the Impact-Effort Matrix reference guide for more information on I/E matrices. If you want more nuanced data about which problems the team wants to work on, give each team member a set of “dot vote stickers” and have them place a dot sticker on the problems they want to work on.
- **Future state vision for the process:** the Lean Facilitator asks the team to spend a few minutes writing down their answers to the question “what would our process look and feel like if this improvement project is a wild success?” on post-its. Then, the Lean facilitator will organize all post-its into categories and discuss their thoughts about the categories they see.



11. **Assign research agenda topics** to participants.

After the event:

12. **Meet with the Project Sponsor.** Once the team concludes their VSM, the Lean facilitator should meet with the Project Sponsor with the Project Lead to discuss the results of the VSM. By the end of this meeting, the Project Sponsor and Lean facilitator should work together to confirm which problem areas the organization will prioritize for improvement. Also consider any ideas that were generated on

# Value Stream Mapping

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the idea incubator – some may be “Just Do It” opportunities, while others might need more investigation.

## 13. Possible next steps

- **Develop a future state or ideal state map.** This can also be done in the VSM session, if you have time. See Future State Mapping Reference Guide for more details.
- **Assign pain points to staff as individual improvement projects.** Small- to medium-sized projects (requiring 2-3 staff members, solved over the span of a few months) work best for individual staff to carry forward independently. Larger projects, which may require 4+ staff and 6+ months to complete, should be explored via Rapid Improvement Event (RIE). Time permitting, staff can bring these projects into Lean Leaders training.
- **Plan Rapid Improvement Events.** Identified problem areas that are poorly understood, cross-divisional, politically sensitive, or otherwise difficult might be more appropriate for a facilitated event or series of improvement sessions. Now that the team has selected the parts of the process they want to focus on, the Lean facilitator can begin to develop the RIE schedule. CP has experimented with several different structures for RIEs. See the RIE reference guide for more details on creating agendas for RIEs.