Lean Toolkit

July 2018

Lean Toolkit

The City Performance Lean Toolbox is a set of reference guides, templates, gold standard project examples, and other resources designed to make it easy to design an entire lean process improvement project or just a standalone lean facilitation tool without reinventing the wheel. The resources here have been carefully researched and vetted by the Lean Team. Enjoy!

Sections

What is an A3?

An A3 is a tool that you can use to plan and document your large-scale process improvement project. The tool is called an A3 because it allows you to capture all the thinking you've done for your process improvement project on one A3-sized (11x17) sheet of paper. This tool both helps you structure your own thinking about how to make an improvement and communicate the purpose, research, and findings of your project to others. City Performance typically uses an A3 to guide the RIE thought process and record and share the team's results. You can also show this to your supervisor to attain buy-in on making a change. It can be a powerful storytelling tool.

Project Name

Team Members		Executive Sponsor	
Event Date		Process Owner	
Process trigger		Version Date	
Process end		Who are our customers?	

1. Why is change needed?	4. Root causes	7. Action plan

		Action item	Assigned to	Date completed

2. Current state	5. Brainstorm solutions	8. Results

	If we…	Then we…	Current State	Future State	30 days	60 days	90 days

3. Future state	6. Experiments	9. Lessons learned

	Action/Innovation	Actual Outcome	What Went Well / Helped	Didn't Go Well/Hindered

When should I use it?

- When you are conducting large-scale process improvement project that requires multiple team members
- When you need to document the preliminary thinking you've done for a process improvement project
- When you need to build consensus or develop buy-in for a process improvement project

How do I facilitate or create it?

When using an A3 in the context of a Rapid Improvement Event, we have found it helpful to develop the first three boxes in advance with executive leadership. These boxes address the questions "What change are we trying to make?" and "How will we know if we are successful?" The subsequent boxes focus on the "How are we going to make this change?"; those are the responsibility of the improvement team and are completed during the event.

1. **Print out an A3 template**.
2. **Develop your "why" statement and write it in box 1**. The why statement should provide your A3 audience with a compelling reason for why change is needed in the process you're working on. A good why statement clearly defines the problem, discusses the impact of the problem on customers and the people who do the work.

A few questions to consider as you develop your why statement:

- What is the problem?
- Why is change needed?
- What is the customer's chief complaint?
- Why should I care?
- Are there places where staff pain points and customer pain points converge? If so, that could be a good place to start.

If you are facilitating the creation of the A3, make sure to push your team to develop a detailed, impactful why statement by asking numerous clarifying questions. For example, many individuals begin their why statements by saying "the process is frustrating." But what is the impact of that frustration? How does that frustration impact customers or other staff members? Why should we care about this frustration?

Examples of good why statements:
- For the SFMTA Muni Customer Service Project the Why Statement is: "In the current PSR process, customers do not feel valued because they often do not hear back from the agency, and staff spend a lot of time investigating PSRs that have insufficient information, or are not rule violations"

3. **Develop current-state metrics and write them in box 2**. Metrics are quantifiable measures that are used to track and assess business processes. Measuring the current state of your process provides benchmarks that enable you to measure the effects of your improvement efforts and see how close you are to your future state goals.

    If the people you are facilitating are having trouble thinking about metrics, introduce the concept of T-E-A-M (or have them try thinking through metrics with the Metrics Development Worksheet, saved in the toolbox folder). Metric development generally falls into four categories: time, errors, amount, and money (T-E-A-M).

    - Time: develop metrics to assess how long the process or parts of the process take. You can also think about:
        - What percentage of the overall process time is the customer or product waiting?
        - What percentage of the overall process time is "touch time," or time spent working directly on the product or with the customer?
        - How long does the customer or product sit untouched?
    - Errors: You can measure error metrics by counting the number of times a process was not completed correctly the first time. You can also think about:
        - Counting *types* of errors
        - Counting number of times customers ask clarifying questions about a process
    - Amount: amount metrics should capture the information about how many items are produced or customers are served in the process.
    - Money: Money metrics measure the cost of the process. You can count soft costs, such as labor costs) or hard costs (such as the costs of the raw materials used in the process).

In addition to capturing TEAM metrics, you can also capture qualitative metrics, such as customer satisfaction, in this box. You can also include a visual of the current state.

2. Current state metrics

Panel Orientation/Eval Total Staff Touch Time = 40.75 hrs

Yearly Cost (estimated at 30 solicitations, $50/hour) = $61,125

Valid & Accurate Score Sheets, upon submission = 80%

Time to Complete an Orientation/Eval Process = 3 weeks

4. **Develop future-state metrics and write them in box 3**. Take each of the current-state metrics you measure and estimate how much you think you can improve on those metrics once the process is improved. Your future state goals should be reasonable. For example, if your customers are currently waiting several days or weeks to receive a service, it's not likely that you'll be able to reduce their wait time to zero after only one improvement project. Reducing wait times that span days or weeks will likely require multiple improvement projects. Also, it's important to keep your future state goals reasonable so that your project team doesn't become demoralized by not achieving the goals. Focus on getting quick wins that can motivate your team. Write down your future-state estimates for each of your metrics in box 3. Ensure that metrics are clearly defined and achievable.

   Questions to consider while facilitating the creation of future-state metrics:
   - How much time do you think you can save upon improving the process? For example, if customers are waiting 30 minutes to speak with a case worker, how long might they have to wait after you've improved the process?
   - How many errors do you think you can prevent? For example, if 90% of customers are completing their forms incorrectly, what % of customers do you think will complete the form correctly once you've improved the form?
   - How much more of the product or service do you think you can produce?
   - How much money can you save? For example, can you stop printing certain documents or reports? How much would you save in reduced printing costs? Or, can you stop ordering duplicate materials or supplies? How much would you save?

3. Future state metrics

Panel Orientation/Eval Total Staff Touch Time
= 29 hours for new in-person meeting processes, and
= 20.25 hours for new email processes **[30-50% reduced Staff Touch Time]**

*Annual Cost(estimated at 15 new meeting processes + 15 new email processes, $50/hour) = $36,937.50 **[40% cost savings]**

Valid & Accurate Score Sheets, upon submission = 95% **[15% improvement]**

Time to Complete Orientation/Eval Process = 2-3 weeks **[up to 33% improvement]**

5. **Summarize findings from root cause analysis in box 4**. The root cause analysis is your evaluation of the root causes of the obstacles you observe in your process. You can use a process map, fishbone diagram, five whys exercise, spaghetti diagram, and/or communication circle to conduct a root cause analysis. Once you've completed the root cause analysis, figure out what it tells you. The gap analysis should answer the following questions:
   - What are the main obstacles in the process?
   - What are the root causes of these obstacles?

Document your findings in box 4. You can write up a summary of your findings, or you can even add photos of the tools you used to conduct the gap analysis.

4. Process analysis and root causes
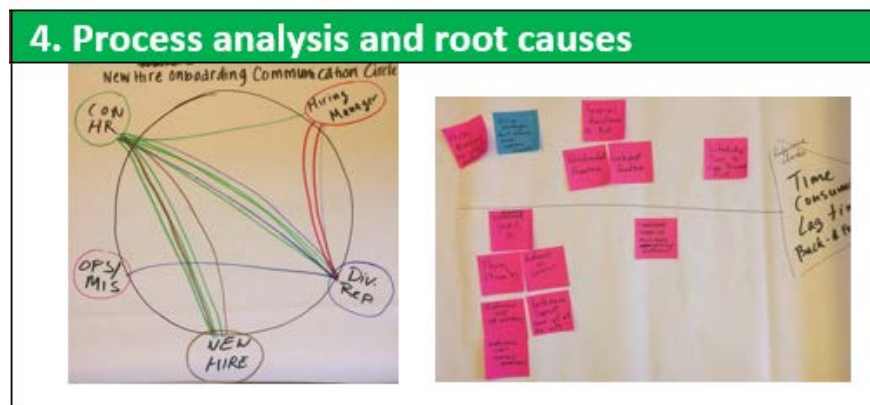
6. **Brainstorm improvement ideas and document them in Box 5: Brainstorming**. Brainstorm ideas by writing them on post-it notes in an "**If we…Then we…**" format. For example, "**if we** eliminate the unnecessary step of double-checking signatures, **then we** reduce the contracting process by two days." When facilitating a brainstorm, encourage team members to write down as many ideas as they can, and get creative with it!

5. What are the possible solutions?

If we...	Then we...
Streamline our set of reference check questions and request references sooner from applicants...	Can expedite the reference check process.
Issue contingent offer letters to new employees...	Can get a jump start on the pre-employment activities.
Move Emergency Management onboarding orientation components to EM staff	Save HR time w/ onboarding and EM can better track mandatory trainings

7. **Decide which improvement ideas you want to tackle first, conduct experiments, and document them in Box 6: Experiments**. Try out a few ideas, and don't be afraid to fail! Four great ideas out of ten is better than one great idea out of one!

6. Experiments to test solutions

Action/Innovation	Actual Outcome
Streamline our current set of reference questions	Still working to further streamline, but we've reorganized and rephrased some past questions.
Request information sooner from candidates and begin the background check process	We are requesting information sooner, including email addresses for references, but acting sooner on the information isn't always possible
Transfer the emergency management related onboarding activities to EM.	EM has now successfully conducted three new employee orientations. HR has saved 15 minutes off of our orientations and EM has confirmed several new employees' completion of required trainings.

8. **Develop your action plan and document it in Box 7: Action Plan**. Turn the successful experiments you documented in box 7 into long-term plans by breaking them down into specific action items. Assign a team member to each action item, and assign a due date. Questions to think about:

- What do we need to do to make the successful experiments that we conducted standard practice in our division?
- What needs to happen in the next 30, 60, or 90 days for us to be successful with this project? Even better, what needs to happen next week for us to be successful?

7. Action Plan

Action item	Assigned to	Date completed
Use new Score Sheets, email processes, giving panelists less time on upcoming solicitations	Melissa & Joyce, goal to complete by 10/15	10/15/2016
Draft RFQ language to limit total proposal pages	Melissa, goal to complete by 9/30	9/30/2016
Revise panel instructions (via e-mail and in-person)	Melissa & Joyce, goal to complete by 10/1	10/1/2016

9. **Document your results in Box 8**. Refer to the metrics you chose in boxes 2 and 3 and measure those metrics in your improved process. Copy over each current and future state metric into the Box 8. Then, once you measure the improved process 30 days later, document the changes to those metrics. Complete the same process 60 days out and 90 days out.

8. Results

Current State	Future State	30 days	60 days	90 days
Total Staff Touch Time = 40.75 hrs	29 hours for in-person, 20.25 hours for email	RFQ (in person): 20 hrs; email scoresheet, no prep for mtg, panelists had 4 days for a 1 hr mtg.	RFQ (in-person) 28 hours	RFQ (email): 20 hours
Score Sheets Accuracy = 80%	95%	95%	95%. Errors in CMD section.	99%. No errors in CMD section.
Time to complete =2-3 weeks	Average 2.5 weeks	Average 2.5 weeks	Average 2.5 weeks	Average 2.5 weeks

10. **Document the lessons learned in Box 9**. Ask yourself and your team: what went well with this process? What could have gone better? Try doing a "Plus/Delta" exercise with your team.

9. Lessons Learned	
Went Well/Helped	**Didn't Go Well/Hindered**
Provided a LEAN framework to analyze issues and develop solutions that can address root causes to problems. LEAN provides various tools for multi-level analyses.	Process mapping would have been very challenging without the LEAN facilitation. LEAN's expertise during the mapping process is especially valuable during this step.
Identified specific metrics for measuring current and future state to determine if solutions are working.	Measuring the specific metrics for the current vs future state was challenging. LEAN's insight and guidance regarding metrics was valuable.
Provided concrete solutions that range from simple solutions to complex solutions that can be implemented immediately and over time.	

Hints

- The A3 is a living, breathing document. Don't be afraid to update your A3 as the process improvement project unfolds!
- We develop future-state metrics to quantify our aspirations. Future-state metrics aren't measures of exactly how much improvement needs to be done in a certain timeframe; they're meant to help you and your team set your sights on tangible improvement. If you or the team you're facilitating don't reach your future-state metrics at project completion, figure out why, and then keep improving!

Lessons learned

- Teams struggle the most with developing compelling why statements and metrics. Often, people are quick to identify the intellectual reason for why change is needed, but struggle with identifying the feelings. One way to help teams get to the emotionally compelling why statement is by asking the team how the problem makes people *feel*. When you get to feelings, you've arrived at your why statement.
- With regard to metrics, many people don't think about their processes in terms of measurements. Asking people to collect data on their process is likely a new endeavor and requires some additional assistance, but it is an especially useful exercise in helping people attain some distance from the process and view the process through a more scientific, exploratory lens.

A3 – [Insert Project Title]

A3 Owner	*[Add your name here]*
Team Members	*[Add the names of the people who are on your project team]*
Process Trigger	*[What is the first step on your process map?]*
Process End	*[What is the last step in your process map?]*

Executive Sponsor	*[The person who oversees the entire work stream]*
Process Owner	*[The person who can approve a change to the process]*
Version Date	*[Update the A3 as frequently as you can! – add the date on which you updated the A3 here]*
Who are our customers?	*Specific end users who benefit from your service (for example, hiring managers)*

1. Why is change needed?

- *How do obstacles in the process affect your customers?*
- *How do obstacles in the process affect you and your coworkers?*

2. Current state

What is happening in your process right now?

- *What obstacles did you notice while doing Gemba walks of the process?*
- *What key learnings resulted from creating a process map?*
- *What did you learn from talking with customers or other stakeholders about the process?*

What is the specific, measurable baseline for current performance?

- *What metrics will you use to measure the problem?*
- *Example: 50% of applicants attended their scheduled civil service exam in FY18*

3. Future state

What outcome do you hope to achieve?

Imagine this improvement effort has been a wild success. Everyone, including you and your customers, love the new process.

- *What does that process look like?*
- *What obstacles have you removed?*
- *What is the customer experience like?*

What is the specific, measurable target for future improvement?

By how much do you want to improve on the metric goal you listed in box 2(B)? When did/are you aiming to achieve that goal by?
Example: 75% of applicants attend their scheduled civil service exam by January 2019.

4. Root cause analysis

- *What are the root causes of the problems you see in the process?*
- *Describe the results of your Five Whys exercise or Fishbone Diagram here.*
- *You can either write it out in words, or create a visual of the root causes and put it in this box.*

5. Proposed Solutions

Proposed Solution	Root Cause Addressed	Description of expected results	Impact (High/Medium/Low)	Effort (High/Medium/Low)	Is it a good idea?
What's the short title of the solution you're testing? (Ex: Modify application form)	*What root cause from box 4 does this solution address?*	*Once implemented, what result do you expect to see?*	*How much would this solution improve your metrics?*	*How much effort will it take?*	*Does this solution:* *- Make an impact for reasonable effort?* *- Logically connect to a root cause?* *- Have buy-in from stakeholders?*

6. Action plan

Action/Solution	Description	Owner	Date: By when?
What's the short title of this action item? (Ex: Modify application form)	*What do you plan to do?*	*Who is the one person who will be responsible for ensuring that this gets done?*	*When will this large task be complete?*

7. Results

Metric	Current / Baseline	Future / Target	30 days	60 days	90 days
Example: Applicants who attend their scheduled civil service exam	*50%*	*75%*	*52%*	*70%*	*85%*

Rapid Improvement Event

What is a <u>Rapid Improvement Event</u>?

A rapid improvement event (RIE) is a carefully structured, facilitated workshop that employs lean tools to guide a team to make improvements to their work process. City Performance (CP) typically uses an A3 to guide the RIE thought process and record and share the team's results. See the A3 reference guide for more information about the A3.

In traditional lean settings, RIEs are called Kaizen events and usually require a full five-day workweek. Kaizen events are typically two weeks at Toyota. CP's lean program runs shorter RIEs, sometimes compressed into a half or full day(s) or held in a series of meetings over the course of several weeks. Although the event itself is short, careful preparation and follow-up is important for laying the groundwork for sustained change.

In an RIE, a lean facilitator leads an improvement team through an entire lean (A3) thinking process to get a big-picture view of a process, identify major pain points, investigate the root causes of key problems, brainstorm and prototype possible solutions, and determine an action plan to create lasting change. The facilitator, in collaboration with the project and/or executive sponsor, designs and leads each meeting, but the analysis, brainstorming, and experimentation with solutions are driven by the team.

When should I use it?

- When customers (and/or staff) are frustrated about a process
- When resolving the problems in the process requires a collaborative approach with multiple stakeholders. Factors that might require an RIE to resolve include:
  - o The process spans more than one work unit and no one person sees the entire process
  - o Communication or empathy between process participants is a problem
  - o You believe that an upstream part of the process is causing a downstream problem
  - o Broad buy-in is required to agree on solutions to the problem
  - o Problems are complex or poorly understood
- When you have a specific problem you are trying to solve in a specific work process. Vague problems not connected to a clear process are not helpful (e.g. "improve communication") but can often be scoped into a more specific problem (e.g. "Work orders are completed in a timely fashion and coordination between Unit A and Unit B is poor, resulting in frustration and missed deadlines").
- When you have a project sponsor who trust line staff to come up with solutions. It's important for the facilitator to spend enough time with the project sponsor and staff in the project scoping phase to determine whether the appropriate level of trust is present.

How do I facilitate it?

All the resources in the lean toolbox should be used flexibly within the context of your improvement project, but especially so with the RIE. This framework should give you a good starting place that can be adapted to fit the needs of your project. Facilitating a team of people through making changes to their daily work is more art than science.

Helping people through the change is even more important than facilitating lean tools. The reason most improvement efforts fail is because the workers required to make the changes are resistant. See the change

management reference guide for more info on how to help people through change. In the absence of a dedicated change manager, the RIE facilitator must play that role as well.

Work problems are likely to surface that are both emotional and about people (the micro-managing boss, the lazy co-worker, the unreasonable customer). It's important for the facilitator to be able to empathize with the emotions and shift the focus to process solutions: What are the boss's concerns that lead to the micromanagement, and can you design the process to assuage those concerns earlier? What process obstacles might be getting in the way of that co-worker's productivity? What outcome is the customer trying to achieve from the process?

General principles on convening the improvement team:

- Ensure that the project and/or executive sponsor enable the project team to fully commit to the project. If staff aren't provided with the time to participate, it's unlikely the RIE will be successful.
- Convene a team that includes representatives from all major parts of the process, including customers and external stakeholders if possible. If you are working with a small team or unit, then one person might need to wear multiple hats.
- Five to eight is an ideal team size, but smaller or larger groups work as well. Aligning the design of the RIE to group size is more important than number of participants. Controller's Office, City Performance division, has participated in Kaizen events led by Rona Consulting with 15-20 team members. Larger, more complex processes generally require more team members.
- Typically, the improvement team consists of the facilitators, a team lead from the client department, and several stakeholders representing different portions of the process. The process owner and executive sponsor do not have to participate in the team, as long as they are willing to give the team leeway to make process changes.
- See the accompanying roles and responsibilities document to understand how members of the team work together.

General principles on working with the improvement team:

- As a facilitator, your role is to guide the team to develop their own solutions. You provide the lean tools, structure and guidance, but it's important not to impose a solution on the team or pick sides. An important aspect to getting buy-in from staff and sustaining change is to have the solutions come from the team.
- Give as much responsibility to the team lead and team members as possible, even if it takes more time than doing something yourself.

Roles

- Executive sponsor – this is the person who signs off on the project plan and has the authority to allocate resources and make decisions. For example, in a City Performance Lean Team RIE with the Recreation and Parks Department, the Executive Sponsor is the department's Director of Operations who has department-wide authority. For larger engagements, you may also have a project sponsor in between the executive sponsor(s) or team lead. A process that spans multiple departments or divisions should involve a sponsor from each: For the RIE with SFMTA, the Director of

Communications and the Director of Transit served as executive sponsors because the process spanned across two large divisions in the agency.

- **Team Lead** – this is staff person who is the day-to-day project manager for the improvement project. This person works most closely with the RIE facilitator on planning and executing the RIE.
- **Process owner** – this is typically a mid-level manager who is accountable for the work process. This person may or may not join the improvement team and may or may not serve as the Team Lead.
- **Subject Matter Experts (SMEs)** – SMEs might be a part of the improvement team or brought in during the event to answer questions. For example, during Rona's Kaizen event with Public Health and Human Resources, a SME on the City's external facing job application system, JobAps, was brought in to answer questions about potential changes to JobAps.
- **Customer** – It is ideal to have a customer of the process participate in the RIE to ensure the voice of the customer is present throughout the event. Because it is often difficult to do this, the lean team has brought customers in to share their experiences and has also conducted pre-RIE surveys and interviews with customers to gather customer input.
- **RIE facilitator** – this is the staff person who leads the RIE. This person is trained in lean and experienced in running RIEs.

Key meetings

Before the event:

1. **Meet with the project sponsor**. The sponsor is responsible for defining the problem to be solved and how success will be measured. Accessible quantitative metrics are great ("I want to cut customer wait time from 4 hours to 2.") but qualitative is fine as well ("We need to ensure that our monthly invoice process holds contractors accountable for meeting their service objectives."). The sponsor should also be comfortable delegating the work of solving that problem to the improvement team and supporting their ideas if possible. The sponsor should choose a team lead and define clear start and end points of the process to be improved (collaboratively with team lead if needed).

2. **Meet with the team lead**. Team lead will have primary responsibility on the client side for ensuring that the action plan is complete. She should be the primary point of communication with the team and take responsibility for reporting on the team's progress to the sponsor.

During the event

The RIE itself may be structured in any number of ways. A traditional lean Kaizen takes a full five days back-to-back. City Performance and the Lean Team have run events in three full days, one full day, a half day, or a series of meetings over the course of a month or more. See the accompanying sample RIE agenda spreadsheet for an example of how to structure an RIE in four discrete sessions.

Regardless of how the RIE is scheduled, the team should follow these basic steps:

3. **Kickoff, define the problem, and set expectations.** The sponsor should say what change she expects the group to make and assert that she is trusting the details to staff. The facilitator and team lead should set clear expectations for roles and responsibilities, group participation, and attendance.
4. **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). We have also run our 4-hour Lean 101 training as a first session of the improvement event, with some of the content adjusted to reflect the RIE goals.

5. **Map the current state and identify obstacles**. Tools may include:
   - Gemba walks
   - Process mapping, with waste identification and time analysis
     After process mapping, you may choose one or two key problem areas to focus on for root cause analysis and solutions.

6. **Determine root causes of problems**. Tools may include:
   - Voice of the customer
   - Fishbone diagram
   - Five Whys
   - Spaghetti Diagram
   - Tally sheet
   - Communication circle
   - Empathy map

7. **Brainstorm solutions and prototypes.** Tools may include:
   - Brainstorming and prioritizing via an impact-effort matrix
   - Dedicated time in the meeting to develop prototypes and create standard work
   - Soliciting feedback from team members or other colleagues
   - Designing a future state/ideal state

8. **Create an action plan**. Ensure that chosen solutions are assigned to a team member for implementation, with a clear due date. Vague process changes must be translated into concrete steps, often involving the creation or editing of standard work.
   For example, a poor action plan item is "In the future, post RFPs on the website." This step is likely to be forgotten, as it lives only in the best intentions of the team. A better approach is to embed the process change in standard work: "Create an RFP publication checklist, including instructions to post link on website."

9. **Prepare for report out**. The team should all be responsible for presenting a portion of their analysis to management. Allow time in the meeting to choose presentation sessions and practice the presentation.

After the event:

10. **Conduct a report out**. Everyone who touches the process should be invited to the report out. You can use the accompanying sample report out slide deck as a template for the presentation. The team lead should lead the report out and the improvement team should do nearly all the talking. The project sponsor should be prepared to congratulate the team for their work and give support for implementation. (The team's proposals should be vetted with the sponsor during or shortly after the event and adjustments made as necessary – no surprises for the sponsor at the report-out!)

11. **Monitor progress via 30/60/90 day check-ins.** Schedule check-ins with the project sponsor and team lead for 30 days, 60 days, and 90 days after the completion of the event. These meetings should provide updates on the success measures for the project (A3 box 8) and provide accountability to implementing the action plan. The team lead should be responsible for leading these check-ins.

RIE Task Checklist

<u>Before the event:</u>

Tasks/agenda items for executive sponsor

- ☐ Clarify the problem to be solved
- ☐ Identify what success would look like to the sponsor.
- ☐ Define start and end points of process
- ☐ Identify team lead
- ☐ Identify key team members
- ☐ Agree to adopt a posture of saying "Yes if" instead of "No because"
- ☐ Ensure that team members' immediate supervisors know about the event, the time required of their staff, and why it is important to the project sponsor. Have sponsor communicate this if needed.
- ☐ Sponsor should orient team members to the project (by email, at a staff meeting, etc.), including clear expectations to be present for all event meetings

Tasks/agenda items for team lead

- ☐ Make final decisions about team composition
- ☐ Discuss roles and responsibilities for the team lead, lean facilitator, and improvement team members
- ☐ Specify metrics (quantitative if possible)
- ☐ Fill out Boxes 1-3 of the A3
- ☐ Set schedule for RIE
- ☐ Ensure that team lead or designee reserves appropriate meeting space for the team
- ☐ Solicit feedback from team lead about meeting agendas and tools to use
- ☐ Set up any planned RIE events requiring external coordination (e.g., off-site Gemba walks, inviting someone as a Voice of the Customer).

Facilitator tasks
- ☐ Identify and solve any scheduling conflicts with team members
- ☐ Gain general familiarity with the process. Try to have an idea of likely areas of process frustration before the event begins, in order to design tools to solve for them.
- ☐ Develop RIE meeting agendas
- ☐ Order coffee/food for event as needed

<u>During the event</u>

Tasks for team lead

- ☐ Report to project sponsor on progress (if RIE spans several weeks)
- ☐ Send meeting reminders
- ☐ Hold team members accountable for completing any homework between meetings

Rapid Improvement Event

☐ Provide feedback on agendas and information about how the team is doing

☐ Work with facilitator to complete A3 boxes 4-7

☐ Ensure that project sponsor, the process owner, other staff who perform the process, and other stakeholders give input to the team's work and the team makes adjustments based on their input. (Avoid surprises at the report out!)

Facilitator tasks

☐ Bring materials needed for facilitation tools

☐ Facilitate team through the use of lean tools

☐ Gauge the group's emotions and energy and adjust agendas accordingly

☐ Bring coffee or snacks to create a more fun environment and build rapport

☐ Manage time in meetings, facilitate team through the use of lean tools

☐ Coach team lead in how to support the team to do its best thinking and follow-through on tasks

☐ Document the team's work: Take pictures, type up experiments and action plans

☐ Work with team lead to complete A3 boxes 4-7

☐ Prepare report out slide deck

After the event:

Report out – team lead

☐ Schedule a room, allowing time for set up and rehearsal.

☐ Prepare handouts

☐ Incorporate any additional feedback from the report out into the action plan

☐ Do something celebratory afterwards (lunch, happy hour)

30/60/90-day check-in tasks – team lead

☐ Update A3 box 8 with current process performance

☐ Update completion status of action plan items

☐ Highlight areas where planned activities need to be adjusted or followed up on

☐ Reflect on lessons learned

Role	Who	Role Description	Commitment Guidelines
Executive Sponsor	*Insert Name(s)*	**Responsible for division for the process**. Works closely with facilitator & process owner to ensure event is planned thoroughly and conducted well. Meets on a regular basis with Process Owner and others as appropriate to review metric results and action plan.	a) 1 day-long lean training b) 1-hour charter approval meeting (in lieu of permanent process owner) c) Kickoff effort at first team meeting (30 min) d) Attendance at report-outs (0.5 -1 hour for each process, during last group meeting) e) Check-in meetings after each process has been developed (1 hour)
Process Owner		**Owns (has responsibility for and can affect) the process being reviewed**; works closely with executive sponsor & facilitator to ensure project is planned thoroughly and conducted well. Calculates metrics at baseline and at periodic follow-ups. Responsible for posting metrics and for visual management of metrics for the work unit. Ensures that the metrics are moving in the desired direction; takes appropriate action to affect metrics that are not moving in the desired direction. Leads team to report results back to executive sponsor. Responsible for ensuring the completion of action plan items and the sustainment of innovation efforts / identified process improvements.	a) 1 day-long lean training b) 1-hour charter approval meeting c) 1 hour check-in meetings after each process with executive sponsor d) 4 meetings with improvement team for each sub-process (9 hours total) e) at least one follow-up meeting to review metrics and progress
Team Lead		**Responsible for delivering real results during the event week**, keeping the team focused on daily requirements and providing leadership to the team. Guides team toward aggressive changes. Responsible for scheduling, securing conference rooms, and sending event invitations to team members. Leads executive read-out. Assists process owner and executive sponsor with metrics. Schedules and attends follow-up meetings to review metrics and progress.	a) 1 day-long lean training b) 1 hour check-in meetings after each process with executive sponsor c) 4 meetings with improvement team for each sub-process (9 hours total) d) at least one follow-up meeting to review metrics and progress
Facilitator		**Owns the Lean process**. Assists, supports, and motivates the improvement team. Provides direction necessary to facilitate a successful learning experience for all team members while achieving the team goals and objectives. Suggests tools to help identify and eliminate obstacles. Creates a positive and safe environment; teaches and empowers others. Responsible for scheduling meetings and locations.	a) 1 day-long lean training b) 1-hour charter approval meeting c) 1 hour check-in meetings after each process with executive sponsor d) 4 meetings with improvement team for each sub-process (9 hours total) e) at least one follow-up meeting to review metrics and progress f) other meetings as needed
Team members		**People directly involved in the daily workload, or touching the process**. Shows up prepared and on time for all group meetings; unavoidable absences should be cleared in advance with both facilitator and process owner. Contributes to the team by actively participating in meetings, contributing ideas, giving feedback, asking questions, and running experiments. Requires openness to new ideas and changing the way work has been done in the past. With approval of process owner, responsible for implementing action plan items and new standard work developed during project.	a) 1 day-long lean training b) 4 meetings with improvement team for each sub-process (9 hours total) c) on-the-job time to run experiments and implement changes

Schedule – Solicitation Process Improvement/Development

| Date	Meeting	Who	Time	Tasks
Late Oct	A3 approval meeting	Facilitators Process owner/team lead	1 hour	• Review and sign off on project roles and responsibilities, schedule • Define process trigger and end, customer • Determine proposed metrics for contracting process
Nov. 2	Lean training	Everyone	8 hours	
Nov. 9, 9am – 12pm	Team meeting 1	Process owner/team lead Facilitators Team members Exec sponsor (30 min)	3 hours	• Kickoff from sponsor (30 min) • Review charter – goals, metrics, customer, schedule • Pre-mortem – How can we maximize chance of success? • Who are our customers? • Create current state map process ○ Value-added/legally required analysis ○ Time metrics ○ Identify obstacles in current state
Nov. 15, 1pm – 3pm	Team meeting 2	Process owner/team lead Facilitators Team members	2 hours	• Voice of the customer • Root cause analysis tools • Brainstorm solutions to obstacles
Nov. 21, 9am -11am	Team meeting 3	Process owner/team lead Facilitators Team members	2 hours	• Intro to designing new process • Brainstorm ways to increase flow: How Might We… • Choose ideas to test ○ Sort using impact/effort ○ Design and assign responsibility for experiments • Design future state, focusing on value-added steps ○ Determine additional experiments based on future state
Dec. 6, 9am – 11am	Team meeting 4	Process owner/team lead Facilitators Team members Exec sponsor (1 hour) and other stakeholders	2 hours	• Review stakeholder feedback and results of experiments • Make changes to future state • Assign responsibility for creation of new standard work • Create action/completion plan • Review lessons learned • Report-out to executive sponsors and stakeholders
Week of Dec. 12	Debrief	Exec sponsors Facilitators Process owner	1 hour	• Discuss lessons learned • Review next steps from process • Assess whether changes need to be made to plan for process

Just Do It / Just Stop It

What is a <u>Just Do It / Just Stop It?</u>

The Just Do It / Just Stop It (JDI) is a simplified approach to process improvement that enables individuals or very small groups (2-3 people) to quickly remove one or more obstacles from a process. The JDI follows A3 thinking, but doesn't require process documentation and analysis.

Examples of JDI projects include:

- Conduct 5S on individual or group work spaces
- Create or improve a form, check-list, instructions or other standard work
- Create or improve a visual management tool

Figure 1. City Performance supply cabinet before 5S JDI
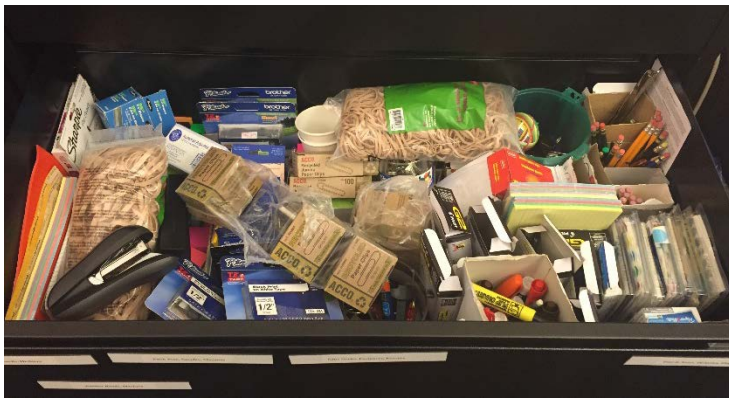
Figure 2. City Performance supply cabinet after 5S JDI

Just Do It / Just Stop It

When should I use it?

- The problem and its solution are obvious (the problem doesn't require root cause analysis);
- The solution can be accomplished within 24 hours; and, if the solution doesn't work, you can revert to the original state within the following 24 hours
- The solution can be accomplished by 1-3 people – it doesn't require vetting and input from multiple people
- The people who conduct the JDI also have responsibility for the problem. For example, you could conduct a 5S JDI on your desk, but not someone else's. The scope of the JDI is small scale – individual or very small group.
- In general, the Lean Team has used JDIs to document the improvement work of **individuals**, while A3s are more appropriate for **teams**.

How do I conduct a Just Do It / Just Stop It?

JDIs are a great way to get staff excited about improvement quickly. Ideas that fit in the "quick wins" quadrant of the impact-effort matrix (low impact, low effort) would make excellent JDIs.

The JDI follows an A3 structure. Use the accompanying form to document JDIs. While staff might be tempted to pursue a JDI without completing the JDI form, we recommend that individuals complete the form in order to document and communicate the value of improvements. This is particularly useful information to share with managers and executives.

Good times to ask staff to complete JDIs include:

- As an immediate follow-up to lean training
- During the brainstorming/experimentation phase of a process improvement
- Continuously, during an extended lean partnership

If staff need assistance, lean facilitators can help them talk through their possible solution and how to document it in a JDI format. In particular, front line staff may need help developing meaningful metrics.

Just Do It / Just Stop It

Figure 3. Example of completed JDI from Kory Schueler, Human Services Agency Case Worker

Project Name: Creating resource of blank forms

Why is change needed: Wasting a lot of time looking for physical forms in the middle of client interview (walking away from desk)

Who is the customer: Me and all clients

Current and future state costs:
- Time: 5 minutes per interview; 1 hour and 40 minutes per week
- Errors: Wrong form or mistake on form = new copy needed
- Amount: Approx 4 clients/day have slower interview
- Money: $2,773/lost

Savings:
- Faster interviews
- More clients served with saved time
- $2,773 soft cost savings annually

What did you do?
Requested special pocket folder binder and using manila folders in meantime.

Results
Interview is shorter; less prep time for me.

Hints

- Start with a project that you have control over and don't need permission to pursue. For example, conducting a 5S of your own desk.
- If you pursue a JDI that will impact other people, check-in with them first.
- If you want to improve an existing form or other object, check-in with the person who originally created it, if possible.
- Keep going after you've completed your first JDI! Set a goal for yourself to complete one JDI every week or so.
- Share your results with your team.

Just Do It / Just Stop It Form

Title:	Who is involved:
Start/end dates:	Contact phone/email:

Why is change needed?   Convey the pain caused by the problematic process (1-2 sentences).

Ex: Bus schedule in office does not reflect recent changes, so passengers wait for buses that will not arrive

Who is the customer of your process?   The person who *benefits* from your work (usually not yourself).

Ex: MUNI passengers.

Metrics   What improvement do you expect in the future?

METRIC			Current	Future
Time	*How long does the process take each time?*			
Errors	*What percent are done correctly the first time?*			
Amount	*How often do you do the process?*	#	per day / month / year	per day / month / year
Money	*time x amount x staff's hourly wage = soft cost $*	$		

Expected Annual Savings = Current annual cost – future annual cost : _____

Obstacles observed   Check all that apply

☐	Mistakes	☐	Interruptions
☐	Extra Work	☐	Backlog
☐	Waiting	☐	Movement
☐	Unused Human Talent/Things		

Action Taken   What did you do to improve the process? (1-2 sentences)

Example: Revised the sign to reflect the current schedule.

Results   How is everyone better off? (1-2 sentences)

Example: Revised the sign to reflect the current schedule.

Lessons Learned   What should you repeat or change next time?

What Went Well	What Went Poorly

Just Do It / Just Stop It Form

Before and After Photos

Just Do It Form

Project Name: Supply drawer clean up   **Start Date**: 9/16/2016

Who is involved? Ryan, Inger, Kyra, Jenessa   **End Date:** 9/16/2016

1) Why is change needed? (1-2 Sentences)

The office supply drawer is messy and causes staff to waste time looking for needed supplies. It's filled with things that aren't needed making it harder to find the things that are most commonly used.

2) Who is the customer of your process? (List all that apply)

City Performance staff

3) Current & Future State Costs

METRIC		What is the process costing now?	What costs do you hope for in the future?
Time	⏰	2-3 minutes per staff in search time	0 minutes for searching
Errors	❌		
Amount	#	Approx 5 staff access drawer per week	No change
Money	$	10-15 minutes wasted time per week $1000 wasted staff time / year	$0

4) Savings = Current State Costs – Future State Costs

What are the savings for your customer?	**$1000 per year in staff time**

5) Wastes Observed (Check All That Apply)

☐	**Mistakes**	☐	**Interruptions**
☒	**Extra Work**	☐	**Backlog**
☒	**Waiting**	☐	**Movement**
☐	**Unused Human Talent/Things**		

6) Action (What Did You Do?) 1-2 Sentences

Applied Lean "5S" to the supply drawer.

7) Results (How is Everyone Better Off?) 1-2 Sentences

Now we have a clean, well-organized supply drawer that only has the most commonly used items. It's easier for staff to find items. It's also easier for staff to maintain the drawer because we included a picture of what it should look like.

8) Lessons Learned

What Went Well	What Went Poorly
Setting aside a one hour block of time to JUST DO IT!	We could have done a better job of checking-in with staff to identify their most needed items, so a couple items that some people used got discarded.

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9) Please Add Any Photos/Notes Here

BEFORE WE APPLIED LEAN "5S" (Sort, Set In Order, Shine, Standardize, Sustain)


AFTER "5S"

Gemba Walk: "Go and See"

What is a <u>Gemba Walk</u>?

"Gemba" means "the real place" in Japanese. A Gemba Walk is when you go to where the process is happening and observe it. It can also be referred to as a "Go and See". The idea is that by watching the process happen in real time, you and your colleagues will obtain a much better understanding of what's really going on with the process.

When should I use it?

- A key component of Lean philosophy is that managers should regularly observe their team's processes in action to stay informed about what is and isn't working well and to stay meaningfully connected to the work
- A Gemba Walk is particularly useful prior to process mapping, as it provides the details needed to build a process map and begin process analysis
- Gemba Walks are particularly useful if any of the below scenarios are taking place:
  - Differing perspectives about how a process *should* operate and how it *actually* operates.
  - Variability in how staff work the process and process outcomes due to a lack of standard work
  - Assumptions are being made about the process based on anecdotes, not evidence
  - Staff are being blamed for problems in the process
  - When there is little or no data about the process. For example, if no metrics have been collected about the process, it's important to at least gather baseline measures, which can be done through a Gemba Walk.
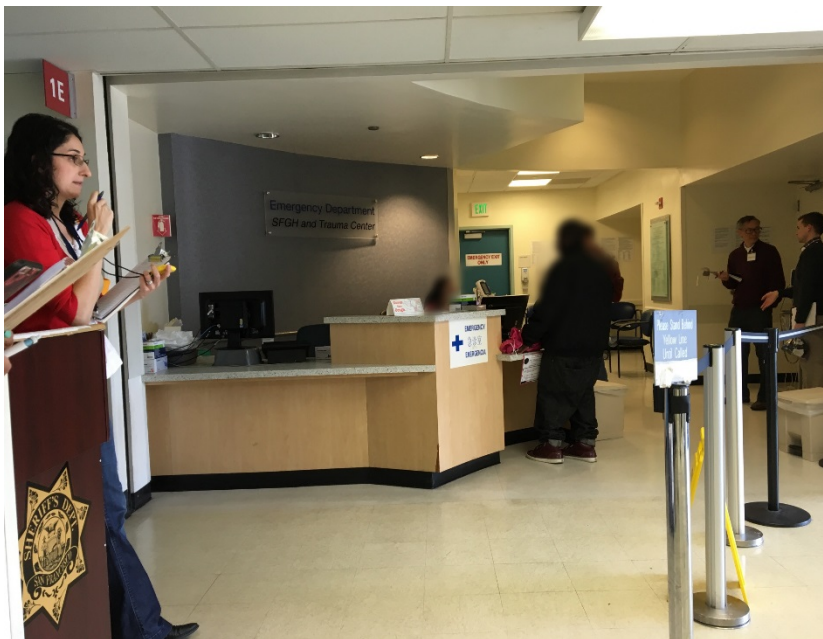
City Performance staff conducting Gemba Walk at SFGH ED in Feb 2016.

Gemba Walk: "Go and See"

How do I conduct a Gemba Walk?

1. **Determine goals.** If you are observing a process as a manager, you can go on a Gemba Walk at any time. If you want to observe a process to improve it, be sure to include the process improvement team. It's important for the project team to observe what their colleagues do and step back from their daily roles.

2. **Plan ahead.** Let staff know when you plan to observe the process. Explain what a Gemba involves, so they aren't surprised. Emphasize that the Gemba is not intended to judge or micro-manage staff, but to learn from them. They are the process experts. If your process is long and complex, scope one or more parts of the process that can be observed in a day or less.

   Assign roles and responsibilities. There are several key roles to play on a Gemba Walk:

   a. **Document steps and times** – it can be helpful to have two staff document steps and times to ensure no steps are missed. You can use the accompanying templates in the toolbox folder. Ask staff non-judgmental, clarifying questions. If appropriate, ask customers about their experience of the process. What would they improve? What are their pain points?

Figure 1. Example of a completed gemba observation form

City Performance – Gemba Observation Form v2

Process:	SFGH Emergency Department Patient Check-In and Triage Process		
Date of Observation:	February 23, 2016		
Start time:	10:00am	End time:	

Step #	Description of step	Step time	Obstacles	Notes
1	Px walks into ED	10:03		Walks into narrow hallway
2	Px looks around for where to go	10:03	Motion; waiting	Poor signage directing patients
3	Px gets into check-in line	10:04	Waiting	Four other people in line
4	Px gets called to counter	10:11		
5	Px provides staff with information	10:11	Extra Work	Px unclear about what it means to have a hospital card
6	Px steps over to the vitals area (very close by) and has vitals taken	10:14	Motion; Waiting	Only one machine – in use by another nurse
7	Px directed to wait for triage nurse; sits on chair	10:22	Waiting	4 minutes was waiting for machine; 4 minutes was vitals being taken
8	Px called to triage room	10:32	Motion	
9	Px exits triage room (triage completed; process ends)	10:40		

b. **Collect documents** – a common process obstacle is mistakes on forms. Does your process have any forms, instructions, checklists or other documents that could be improved? Collect them. You can tape them to the bottom of the process map near the step in the process where the form is used.

c. **Take photos, if allowed** – ask for permission before taking photos.

3. **Watch multiple iterations of the process.** It's important not to watch only one instance of the process because something unusual could happen. You want to make sure you observe a *typical* experience of the process. That is usually the best place to start when improving a process.
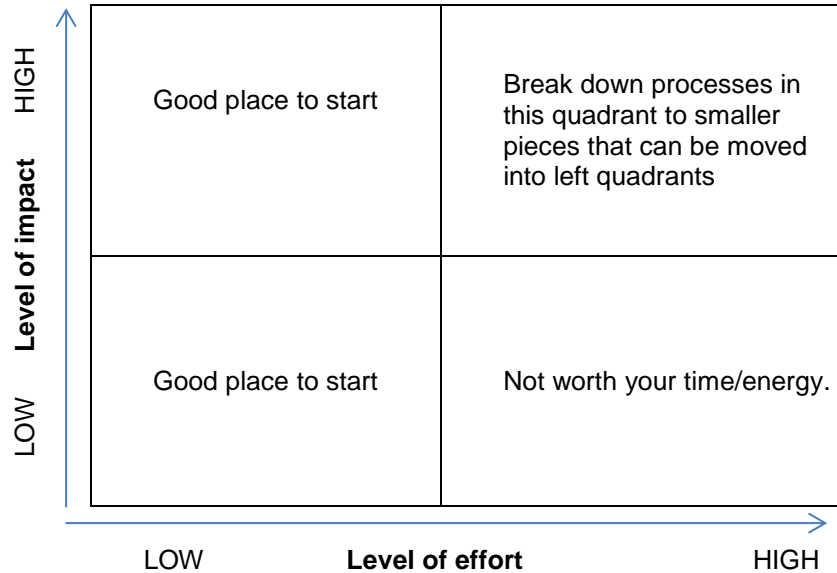
Hints

- Enable staff who work one part of the process to observe other parts of the process. This can help staff better understand the whole process and develop empathy for their colleagues.
- Keep the customer's experience in mind throughout your observations.
- Thank staff for allowing you to observe their process and let them know how you plan to use the info
- Some processes do not lend themselves well to direct observation from start to finish. They may take place over a period of several months, or they may be difficult or time consuming to observe. In such cases, think about the broader principle of Gemba: to get as close as possible to where the work is actually being done. Here are some activities that can take the place of or supplement a traditional Gemba walk:
  - o Invite an end customer of your process to share their experience in a Voice of the Customer session.
  - o Review the forms, instructions, or web pages that the customer sees from a fresh perspective. Would they be clear to you if you were unfamiliar with the process?
  - o Hold your improvement team meetings in the space where the process happens
  - o Can you observe a piece of the process? For example, you may not be able to watch a whole contracting process from start to finish, but can you send observers to key meetings to identify problems that occur?
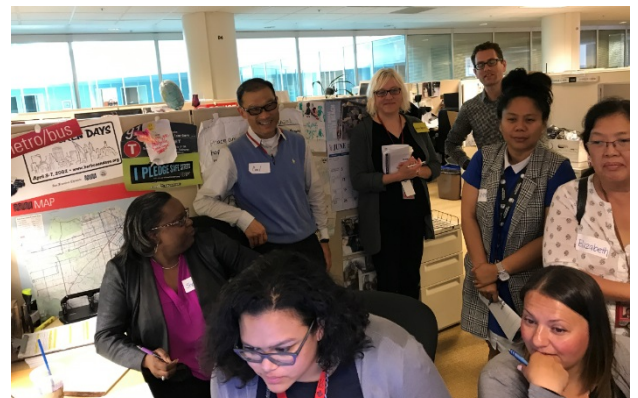
Process Mapping

What is a <u>process map</u>?

A process map is a visual representation of the steps in a business process. In lean process improvement, having a team collaboratively build a process map is an excellent way to build the group's understanding about how a process works, identify common areas of errors or frustration, expose where steps of a process are not standardized, find the steps that do and do not provide value to the customer, and get an estimate for the length of your process. In most lean process improvement projects, the process map is the foundational tool the group uses to get started on improving the process.

Sample map of a new hire on-boarding process

When should I use it?

- After you have identified the scope (the start and end points) of the process you want to improve
- When you want to identify key problem areas in the process to improve upon
- When the process is shared between many different units or roles, and no one person has a view into the entire process
- When you need to estimate the hands-on time for each step of the process
- Process mapping can be used as a standalone activity or as an early tool during a Rapid Improvement Event, Value Stream Mapping session, or other lean facilitation.

How do I facilitate or create it?

1) **Pick a process**
   - Guidelines for choosing a process to work on
     - Staff have control over the process or a part of the process; staff shouldn't spend time improving a process they don't have control over b/c they won't be able to implement changes
     - The Exec Sponsor is willing to make the necessary resources available
     - The scope is reasonable (also see #7 in this list)
     - Use the Impact/Effort Matrix (see Figure 1) to help decide which process to work on

Impact/Effort Matrix

HIGH	Good place to start	Break down processes in this quadrant to smaller pieces that can be moved into left quadrants
LOW	Good place to start	Not worth your time/energy.

Level of impact →

LOW · **Level of effort** · HIGH

2) **Go to the Gemba ("The Real Place") first!**
   - There are different ways to Gemba. Watching a process isn't always straightforward. Administrative or electronic-based processes that occur across multiple departments and months make it harder but not impossible to go to "the Real Place:" Some ideas for how to Gemba:
       o Observe one part of the process that seems to have many pain points – even if that means standing behind someone's desk and watching them work for a couple hours
       o Sit or stand in one place in an office where work is being done and observe what goes on for a couple of hours
       o Ask one or more customers to participate in a focus group to share their experiences of the process
       o If you're building a new process rather than improving an existing one, Go and See how a similar process is being implemented in another division, department
   - Executive sponsor(s), process owner, key process workers should go on the Gemba
   - Executive sponsor(s) and managers should DEFINITELY go on the Gemba
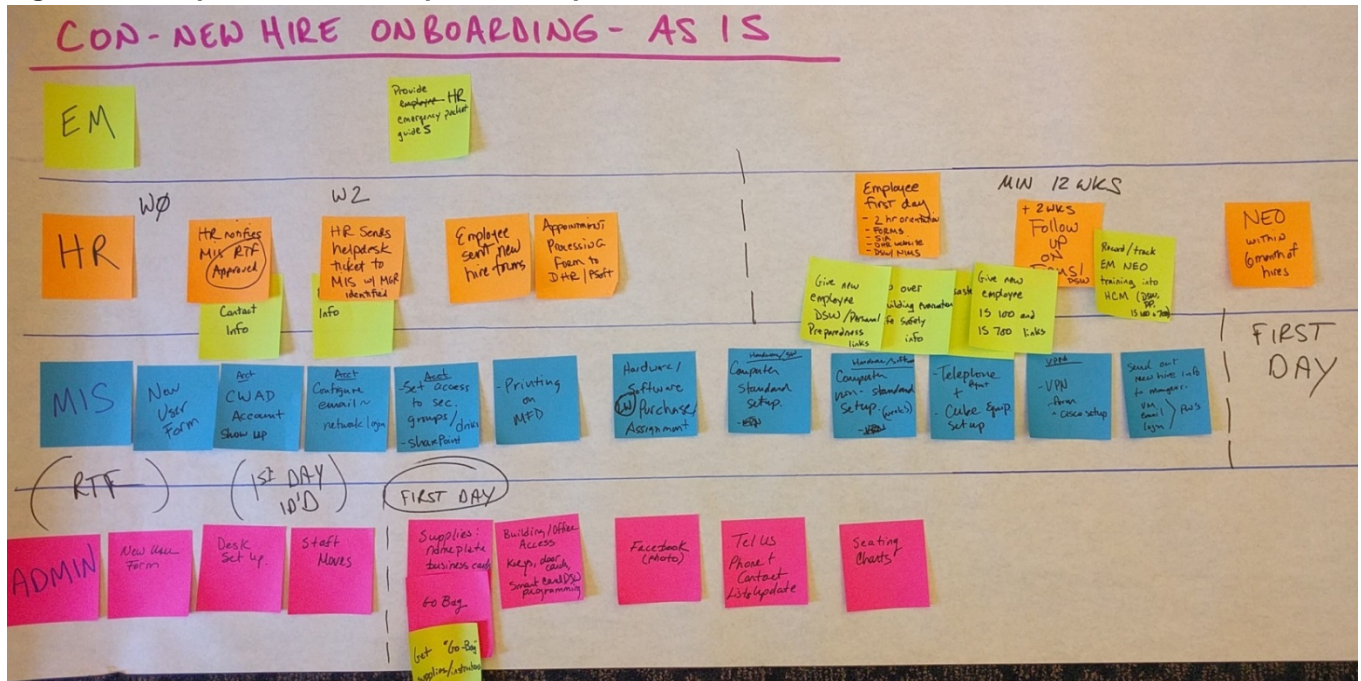
3) **Who participates in process mapping?**
   - All members of the process improvement project team should participate in process mapping EXCEPT the executive sponsor(s) and manager(s) b/c their presence could hinder the participation of the most important people: the process workers.
   - There needs to be someone who can speak to each main step in the process. Not everyone who touches the process has to be there, but the whole process needs to be represented.
   - If there are disagreements about what happens, the people with the disagreements should be present to ensure the differing opinions are presented/included. This means that a supervisor or manager might need to be present if they are in disagreement with a staff person.

4) **Use butcher paper and sticky notes**
   - Write the name of the process, current state (or "As Is") and date of creation at top of map
   - Use pink or red sticky notes for obstacles (wastes)
   - Use different colors for process steps (squares) and decision points (diamonds – flip the sticky note 90 degrees)
   - Can also use different colors for sub-processes or to show steps that happen simultaneously or to show steps completed by different people or teams/units. See Figure 2 for sample process map.
   - Mapping simultaneous steps done by different roles or teams involved in the process is called swimlane mapping, as shown below.

Figure 3. Example of a swimlane process map

5) **Map one instance of the process that occurs most frequently (~80%).**
    - If there are 3 variations of the process that occur equally as frequently then you'll need to map all three variations. Within those variations, map the instance that occurs most frequently.
        - For example, there are two ways someone arrives at the Emergency Dept: (1) walk-in or (2) ambulance drop off. If both processes occur with similar frequency, map both processes. When you map the walk-in process, map what the typical walk-in process looks like. Same with the ambulance process.
    - If there is a ton of variation in the process, then map the instances that represent the majority. For example, with the ambulance drop-off process you might have:
        - Arrives conscious (40%)
        - Arrives unconscious (30%)
        - Arrives semi-conscious (30%)
    - You would map all three because they occur with similar frequency. Then you can build a consolidated map. At some point the processes will most likely converge.

6) **Map from the customer's perspective, if possible/appropriate**
    - Important to get clear from the get-go about who the customer is. The customer is the end user of the service, process or product.
        - For example: staff travel reimbursement process – the customer is the staff person who needs to get reimbursed.
    - Mapping from the staff perspective won't get you all the pain points that the customer experiences and vice versa. This is where swimlane mapping can be helpful. You can build a simple two-lane map: one lane for customers and one for staff. Then you can see both experiences simultaneously.
    - Another tool that can be used is called the Customer Journey Map – this is used in service design. See here and here for more info on building customer journey maps.[1]

7) **Identify the start and end points**
    - If it's a long, complex process, shrink it down. People can get easily overwhelmed by thinking about processes in their entirety. Focus on one part of the process. For example, the City's hiring process is so long and complex. There are many subprocesses. Start with one subprocess such as the application process or exam review process.
    - You can always map other parts of the process later.

8) **Order steps from left to right**
    - If you are swimlane mapping or have extensive routing (Yes/No trees) be sure to indicate which step occurs first by positioning the sticky note that happens first slightly left of the proceeding steps, unless they are actually happening simultaneously in which case the sticky notes would be placed above/below each other.

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[1] On customer journey mapping: http://www.servicedesigntools.org/tools/8 and http://uxmastery.com/how-to-create-a-customer-journey-map/

9) Write who, verb, noun on steps
- If every step in your process is from the customer's perspective, you don't need to write Customer calls finance – you can just write Calls finance – because you know it's the customer. If you introduce other roles in the process map, then include the Who.
- For example: Customer calls Finance; Finance checks FAMIS

10) Write decision points as Y/N questions

For example: Was form completed correctly? Write "Y" and "N" on the arrows showing different routing. Decision points don't get timed. If there is waiting involved with the decision, map that as a separate step preceding the decision. For example: "Staff waits for supervisor's decision". You may want to save drawing arrows on the map until you see that participants are getting close to identify all the process steps. If you draw Y/N lines too early and find that post-its need to be moved to accommodate more steps it will make your map harder to read.
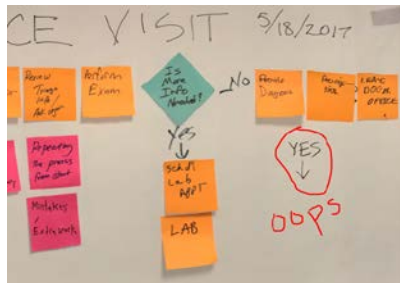

11) Keep the map as simple as possible

No need to map every single detailed step. Keep it relatively high level. You can always dig deeper into a part of the process with another process map. Start big, find your major pain points and go from there.

12) Write times on process steps
- One of the important activities of the Gemba observation is recording how long each process step takes. Because some processes occur over days, weeks or months, it's not possible to observe every step in the process in one Gemba. In those cases, it's important to talk to process workers and ask them to estimate how long each process step takes, on average. Remember, consider the process that occurs 80% of the time – not the outliers. If there is considerable variance in times of each step, uses median instead of average.
- Note the average or median times on each sticky note, as shown in Figure 4.
- How do I deal with waiting times between steps? Typically, we do not worry about whether waiting time is captured consistently or not – the map is just a tool to identify problem areas and solutions and does not need to be precise – but if you want to capture precise time metrics, you should be consistent in how you handle waiting between steps. You can do one of two things:
  1. Include the waiting time associated with each step in each sticky (e.g., application review takes 3 days). If you do this, note that each sticky may include both value-added and non-value added time.
  2. Write only the "touch time" in each sticky, with the waiting time recorded in between steps (e.g., application review takes 20 minutes, with 3 days of waiting).

Figure 4. Note times on each process step
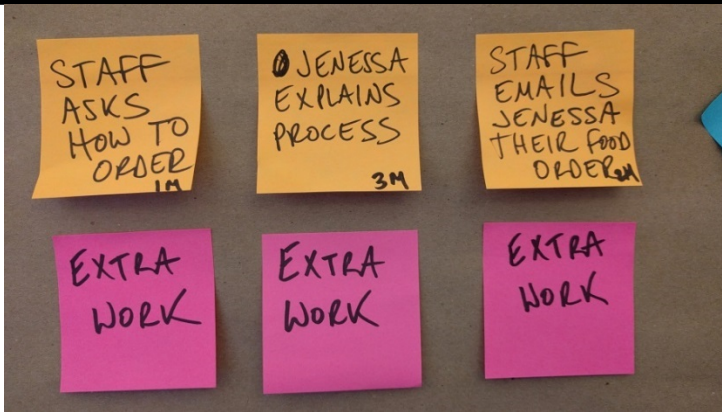
13) Perform Value-Added Analysis (VA, LR, NVA)

Value-added steps (green dots) are:
- Steps that improve the process, service or product
- Steps that the customer is willing to pay for
- Steps that improve the customer's experience

Legally required (yellow dots) steps are:
- These steps are called "Business Necessary" in Lean. However, these are steps that are required by law. These are not steps that are required by *internal policy*. They are in the City's Administrative Code or Charter or mandated by state or federal law.

Non-value added steps (red dots, or left blank) are any steps that haven't been included in VA or NVA. They are the opposite of VA steps: they do not improve the process, service or product in any way. Think about "gold-plating" your product – putting your report in a fancy binder or spending more money on color printing when B&W is fine.

When calculating the total process time, start with calculating the times that do not include any special routing or loopbacks. For example, the time it takes to go through the process answering "YES" to your decision point questions. You can also calculate the variances (when you say "NO" to the decision points to show how much longer it takes when you answer NO – this can show you how much mistakes cost you in terms of time).

**Note value-added, non-value added and legally required steps with dots or other indicators**
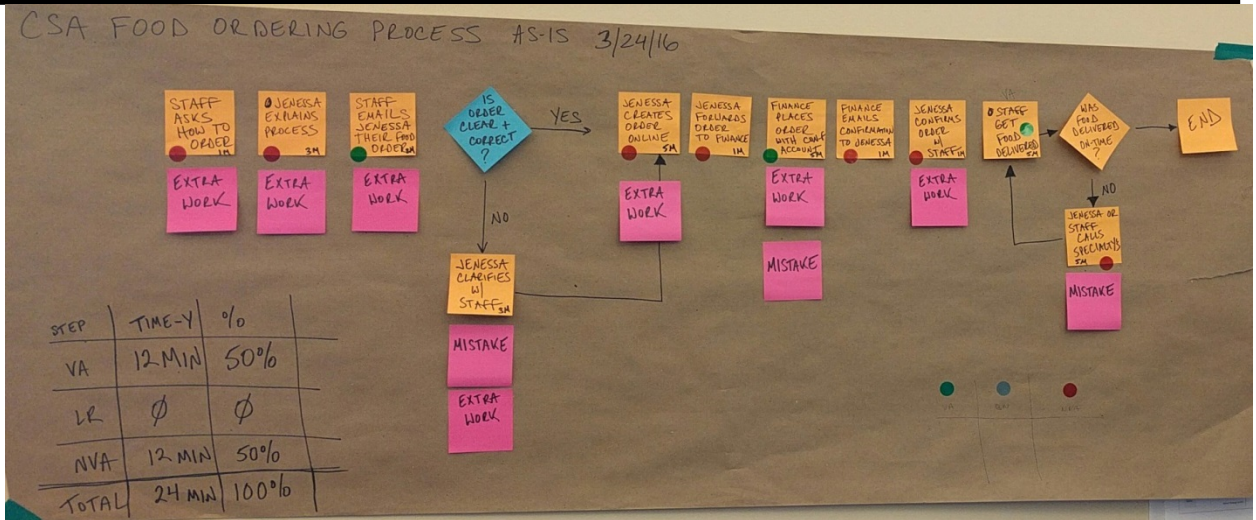
14) Identify obstacles (waste)

Ask the team to place pink stickies under any process step that contains one of the seven obstacles. Post the list of obstacles somewhere prominently and near your process map for easy reference.
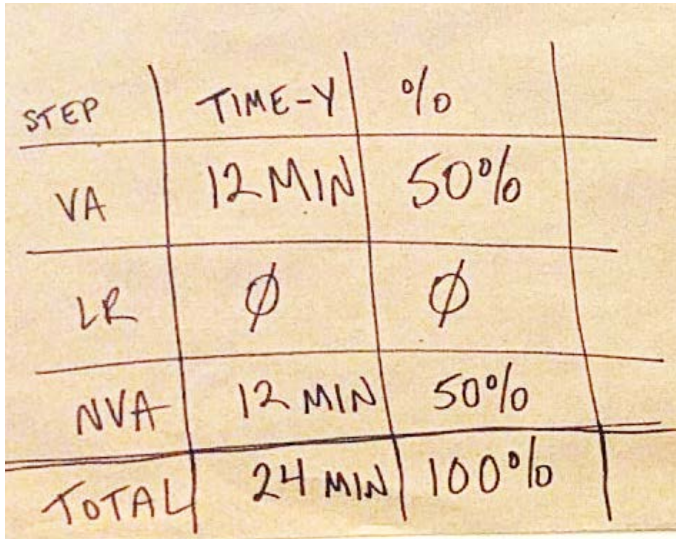
It is best to ask every team member to identify anything they consider an obstacle (that is, explicitly ask the team to flag problems multiple times – you will have to press them on this). In the picture below, note pink stickies clustered like a histogram to indicate areas where the team agrees that significant obstacles happen. You can circle this area and use this as an opportunity to say that process mapping helps to "shrink the change," to start making incremental improvements to the process.
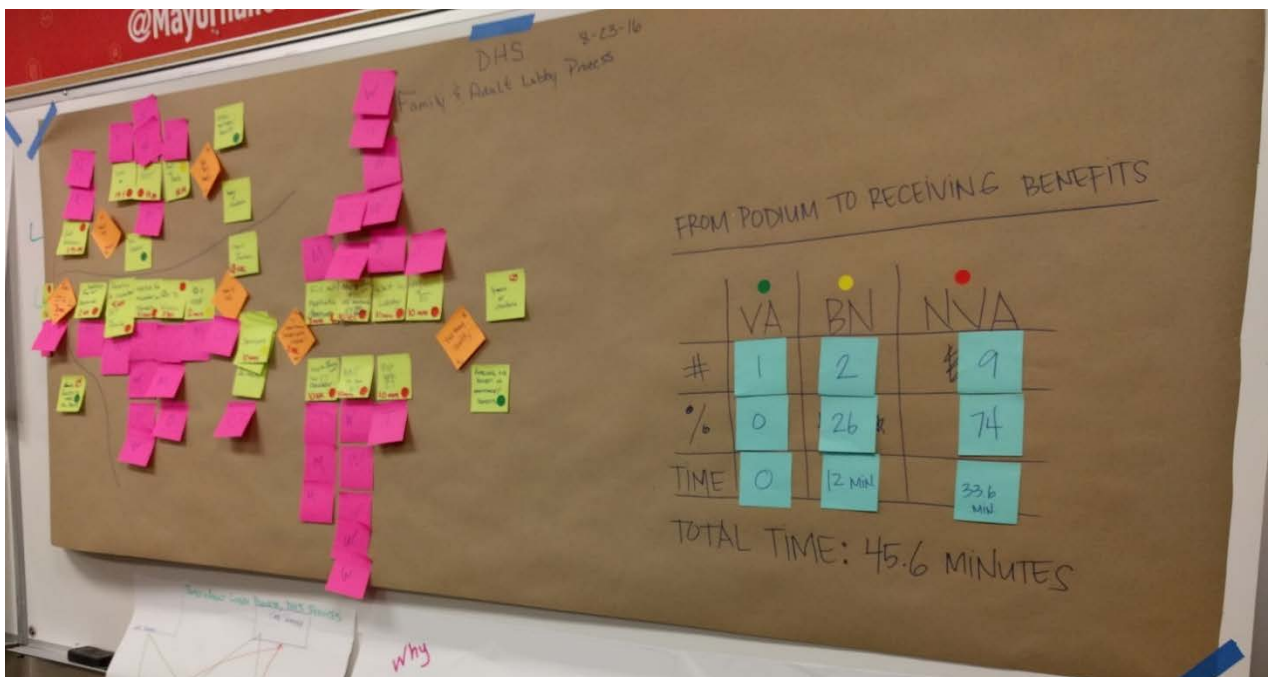
15) Calculate time metrics

Once you have assigned times to steps and performed value-added analysis, you can calculate summary time measures for the process. Add up the times on the VA, NVA, and LR steps and summarize in a table on your mapping paper. Calculate the percent of time and the number of steps that are VA, NVA, and LR.

STEP	TIME-Y	%
VA	12 MIN	50%
LR	Ø	Ø
NVA	12 MIN	50%
TOTAL	24 MIN	100%

Notes on time metrics:
- A typical non-improved process with be less than 10% VA time. Reassure the team that this is fine.
- If desired, you can separate "touch time" from waiting time – see the section on time recording above for a discussion of the difference.
- These time measurements make for an easy improvement metric, especially if you also create a future state process map. Remember, however, that your times are likely based on participants' best guess, so be careful how much weight you put on them.

Hints
- **Avoid discussing solutions.** Map and analyze the process before discussing/brainstorming solutions. This is important because you need to know what the problems are before you can determine the right solutions.
- **Get everyone involved.** As the facilitator, aim to have none of your own handwriting on the map. Give every participant their own stack of stickies and a sharpie. To minimize bottlenecks, you could have some people start at the end of the process and work backwards while others start at the beginning, or you could ask some people to assign times to steps while others fill in the map.
- **Avoid too much discussion.** A process mapping session can quickly get derailed if the team devolves into endless discussion about every step. ("Should completing the intake be recorded as one step or three? Let's debate.") A surprisingly effective strategy is to challenge the team not to speak while creating the map. You wind up with a finished product more quickly, and you can then check in with the team about anything that's missing or incorrect.
- **Stick to the most common path.** Do not try to map every variation of the process. The easiest process maps to work with are those that have no branches at all. Only map branches of the process if they are

needed for the rest of your improvement project. Otherwise, note the decision point with a diamond, but just map the most common path forward.

- **Create a future state map**. The process map can also be used as a tool to eliminate obstacles by re-designing the map to match an envisioned future state. You can make an idealized future state map early in an improvement process by pulling the VA and LR steps from your map and making a new map that includes only the minimum amount of NVA steps required to connect the others. Alternately, you could revisit the process map again towards the end of your process to show how the innovations you're implementing will affect the future process. Creating a future state map is particularly useful when:
    - there *is no* clear current state process,
    - the current state is unclear or not standardized, or
    - your improvement team makes enough changes to the process that the future state steps deviate significantly from the current state.
- **The process map is standard work**. Once you have a future state process map, it is a visual representation of how the process *should* go. You can put the physical map up in the office or create an electronic version in Visio or PowerPoint. The office can keep this map updated to show future changes to the process.
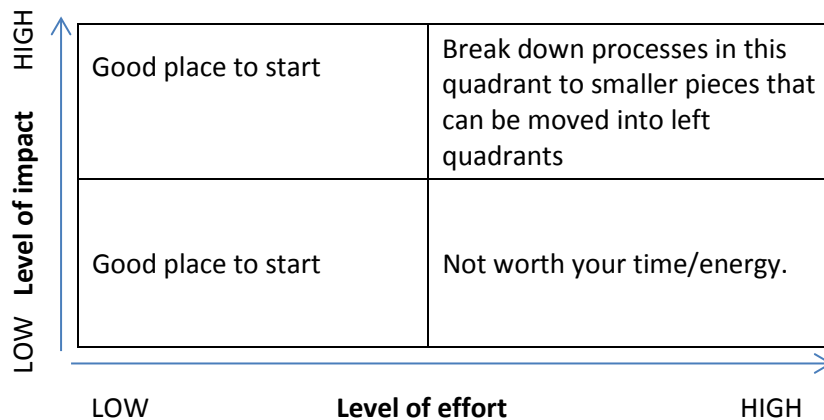
Facilitator's Guide to Current State Process Mapping
Controller's Office, City Performance

1) **Pick a process**
   - Guidelines for choosing a process to work on
     - o Staff have control over the process or a part of the process; staff shouldn't spend time improving a process they don't have control over b/c they won't be able to implement changes
     - o The Exec Sponsor is willing to make the necessary resources available
     - o The scope is reasonable (also see #7 in this list)
     - o Use the Impact/Effort Matrix (see Figure 1) to help decide which process to work on

Figure 1. Impact/Effort Matrix

HIGH	Good place to start	Break down processes in this quadrant to smaller pieces that can be moved into left quadrants
LOW	Good place to start	Not worth your time/energy.

Level of impact (vertical axis, LOW to HIGH)

LOW   **Level of effort**   HIGH

2) **Gemba ("Go and See") first!**
   - There are different ways to Gemba. Watching a process isn't always straightforward. Administrative or electronic-based processes that occur across multiple departments and months are hard to "Go and See". Some ideas for how to Gemba:
     - o Observe one part of the process that seems to have many pain points – even if that means standing behind someone's desk and watching them work for a couple hours
     - o Sit or stand in one place in an office where work is being done and observe what goes on for a couple of hours
     - o Ask one or more customers to participate in a focus group to share their experiences of the process
     - o If you're building a new process rather than improving an existing one, Go and See how a similar process is being implemented in another division, department
   - Executive sponsor(s), process owner, key process workers should go on the Gemba
   - Executive sponsor(s) and managers should DEFINITELY go on the Gemba

Facilitator's Guide to Current State Process Mapping

Controller's Office, City Performance

3) **Who participates in process mapping?**
   - All members of the process improvement project team should participate in process mapping EXCEPT the executive sponsor(s) and manager(s) b/c their presence could hinder the participation of the most important people: the process workers.
   - There needs to be someone who can speak to each main step in the process. Not everyone who touches the process has to be there, but the whole process needs to be represented.
   - If there are disagreements about what happens, the people with the disagreements should be present to ensure the differing opinions are presented/included. This means that a supervisor or manager might need to be present if they are in disagreement with a staff person.

4) **Use butcher paper and sticky notes**
   - Write the name of the process, current state (or "As Is") and date of creation at top of map
   - Use pink or red sticky notes for obstacles (wastes)
   - Use different colors for process steps (squares) and decision points (diamonds – flip the sticky note 90 degrees)
   - Can also use different colors for sub-processes or to show steps that happen simultaneously or to show steps completed by different people or teams/units. See Figure 2 for sample process map.
   - Mapping simultaneous steps done by different roles or teams involved in the process is called swimlane mapping, as shown in Figure 3.

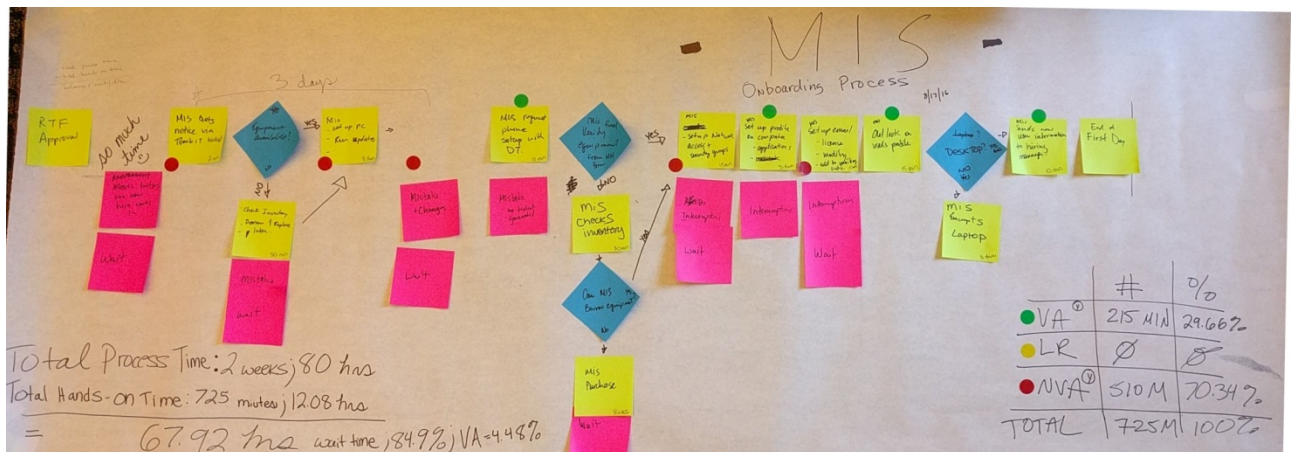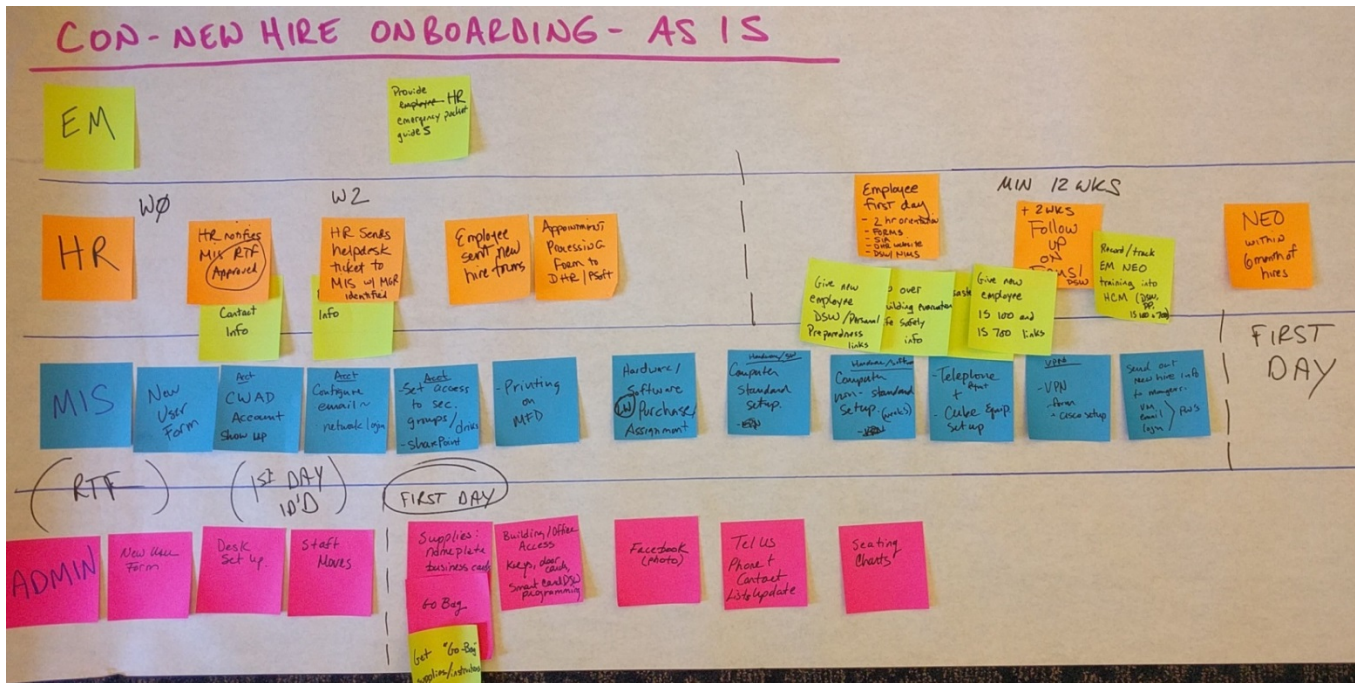**Figure 2. Sample process map of a new hire on-boarding process**

Figure 3. Example of a swimlane process map

5) **Map one instance of the process that occurs most frequently (~80%).**
   - If there are 3 variations of the process that occur equally as frequently then you'll need to map all three variations. Within those variations, map the instance that occurs most frequently.
   - For example, there are two ways someone arrives at the Emergency Dept: (1) walk-in or (2) ambulance drop off. If both processes occur with similar frequency, map both processes. When you map the walk-in process, map what the typical walk-in process looks like. Same with the ambulance process.
   - If there is a ton of variation in the process, then map the instances that represent the majority. For example, with the ambulance drop-off process you might have:
     o Arrives conscious (40%)
     o Arrives unconscious (30%)
     o Arrives semi-conscious (30%)
   - You would map all three because they occur with similar frequency. Then you can build a consolidated map. At some point the processes will most likely converge.

Facilitator's Guide to Current State Process Mapping

Controller's Office, City Performance

6) **Map from the customer's perspective, if possible/appropriate**
   - Important to get clear from the get-go about who the customer is. The customer is the end user of the service, process or product.
   - For example: staff travel reimbursement process – the customer is the staff person who needs to get reimbursed.
   - Mapping from the staff perspective won't get you all the pain points that the customer experiences and vice versa. This is where swimlane mapping can be helpful. You can build a simple two-lane map: one lane for customers and one for staff. Then you can see both experiences simultaneously.
   - Another tool that can be used is called the Customer Journey Map – this is used in service design. See here and here for more info on building customer journey maps.[1]

7) **Identify the start and end points**
   - If it's a long, complex process, shrink it down. People can get easily overwhelmed by thinking about processes in their entirety. Focus on one part of the process. For example, the City's hiring process is so long and complex. There are many subprocesses. Start with one subprocess such as the application process or exam review process.
   - You can always map other parts of the process later.

8) **Order steps from left to right**
   - If you are swimlane mapping or have extensive routing (Yes/No trees) be sure to indicate which step occurs first by positioning the sticky note that happens first slightly left of the proceeding steps, unless they are actually happening simultaneously in which case the sticky notes would be placed above/below each other.

9) **Write who, verb, noun on steps**
   - If every step in your process is from the customer's perspective, you don't need to write Customer calls finance – you can just write Calls finance – because you know it's the customer. If you introduce other roles in the process map, then include the Who.
   - For example: Customer calls Finance; Finance checks FAMIS

10) **Write decision points as Y/N questions**
    For example: Was form completed correctly? Write "Y" and "N" on the arrows showing different routing. Decision points don't get timed. If there is waiting involved with the decision, map that as a separate step preceding the decision. For example: "Staff waits for supervisor's decision".

11) **Keep the map as simple as possible**
    No need to map every single detailed step. Keep it relatively high level. You can always dig deeper into a part of the process with another process map. Start big, find your major pain points and go from there.

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[1] On customer journey mapping: http://www.servicedesigntools.org/tools/8 and http://uxmastery.com/how-to-create-a-customer-journey-map/

12) Write times on process steps

- One of the important activities of the Gemba observation is recording how long each process step takes. Because some processes occur over days, weeks or months, it's not possible to observe every step in the process in one Gemba. In those cases, it's important to talk to process workers and ask them to estimate how long each process step takes, on average. Remember, consider the process that occurs 80% of the time – not the outliers. If there is considerable variance in times of each step, uses median instead of average.
- Note the average or median times on each sticky note, as shown in Figure 4.

Figure 4. Note times on each process step
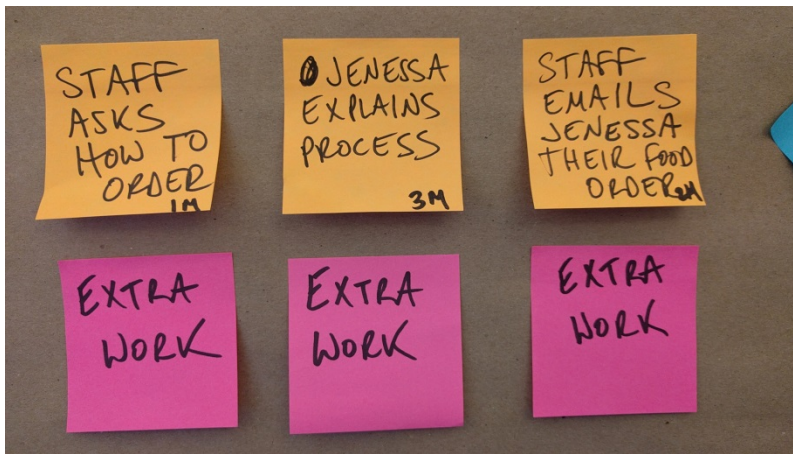
13) VA, LR, NVA

Value-added steps are:

- Steps that improve the process, service or product
- Steps that the customer is willing to pay for
- Steps that improve the customer's experience

Legally required steps are:

- These steps are called "Business Necessary" in Lean. However, these are steps that are required by law. These are not steps that are required by *internal policy*. They are in the City's Administrative Code or Charter or mandated by state or federal law.

Non-value added steps are any steps that haven't been included in VA or NVA. They are the opposite of VA steps: they do not improve the process, service or product in any way. Think about "gold-plating" your product – putting your report in a fancy binder or spending more money on color printing when B&W is fine.

When calculating the total process time, start with calculating the times that do not include any special routing or loopbacks. For example, the time it takes to go through the process answering "YES" to your decision point questions. You can also calculate the variances (when you say "NO" to the decision points to show how much longer it takes when you answer NO – this can show you how much mistakes cost you in terms of time).

Figure 5. Note value-added, non-value added and legally required steps with dots or other indicators
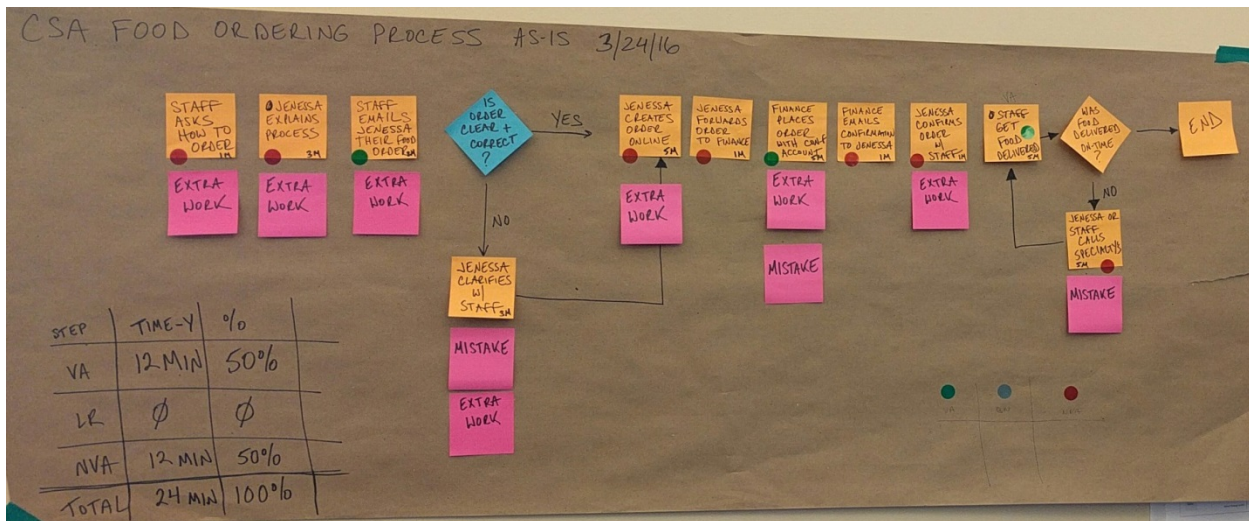

14) Avoid discussing solutions

- Map and analyze the process before discussing/brainstorming solutions. This is important because you need to know what the problem(s) actually are before you can determine the right solution(s).

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Empathy Mapping

What is an Empathy Map?

An empathy map is a collaborative tool teams can use to gain deeper insight into their customers' experiences. An empathy map helps teams conceptualize a group or segment of customers to help determine customer needs. A photo or visual representation of the customer is at the center of a diagram (example below), and after the facilitator reads a brief customer scenario out loud, participants try to imagine the feelings and thoughts the customer may be experiencing. The empathy map invites participants to internalize parts of the customer's experience in ways anecdote or data may not convey.
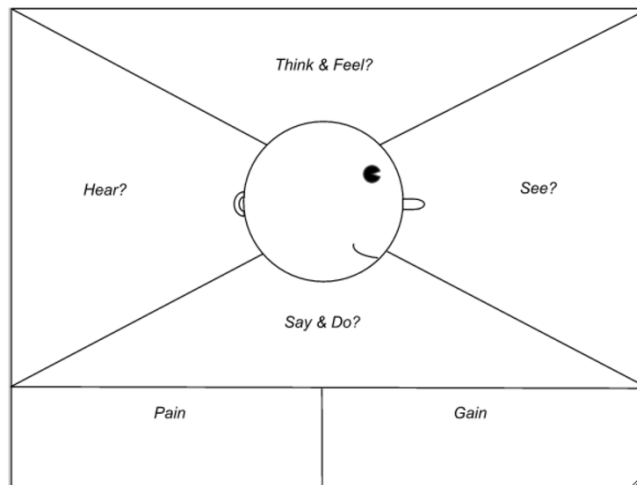
Basic Empathy Map Example

When should I use it?

- When team members are jaded or defensive about their customers' complaints.
- When team members want to blame the customer for process problems
- When team members have difficulty understanding what the customer is thinking or feeling.
- When you need to know what pain points a customer experiences during a process

How do I facilitate or create it?

1. **Gather materials**.
    a. Large flip chart of an empathy Map (examples below)
    b. Sharpies and sticky notes
    c. A completed empathy map as an example for participants to know what the end result should look like.
    d. Customer's scenario written in large font and printed out beside each empathy map.
    e. Photo of a customer in the center of the map
2. **Allocate 15 minutes plus report-out time for the group to develop and present the empathy map.** . This will include 10 minutes to post answers to the map, and 5 minutes to internally discuss the map before report out.
3. **Write several distinct customer scenarios for the group to use in the exercise**. Create scenarios that accurately address the pain-points/challenges in your customer's journey through the process. Using real-life scenarios will help the participants better empathize with the activity. Several example scenarios are given below.

4. **Explain the task.** Inform the group that their task is to immerse themselves in the customer scenarios. This isn't a sterile tick-the-box exercise, but one where you truly imagine how the customer feels. As a facilitator, it is important to convey the customer's <u>emotion</u> as you introduce the distinct scenarios to empathize the pain-point/stress. Encourage the group to recognize and detach themselves from their biases about customers.
5. **Show the group an example.** Pick an unrelated topic/customer to your process as an example to show the group. Choose an example that everyone relates to, such as:
   a. You went to the DMV to get your license renewed. You waited in line for an hour. When you reached the front of the line, the DMV employee told you that you don't have the correct papers and need to return at a later date with those papers. . Run through the exercise with the example scenario, putting one sticky note in each category.
6. **Break into small groups if necessary.** If you have multiple scenarios to cover or a large group you may want to break into small groups to go through the exercise.
7. **Read the scenario to the group** The scenario should be posted next to the empathy map and written in large print. . When reading the scenario, try to convey the feelings of the customer.
8. **Have participants review each section of the empathy map.** Ask participants if they have any questions about any of the sections. Remind participants there is no "right" answer, and to try to imagine being in the customer's shoes when answering the below section questions.
   a. **Tasks** – What tasks are users trying to complete? What questions do they need answered?
   b. **Feelings** – How is the user feeling about the experience? What really matters to them?
   c. **Influences** – What people, things, or places may influence how the user acts?
   d. **Pain Points** – What pain points might the user be experiencing that they hope to overcome?
   e. **Overall Goals** – What is the users ultimate goal? What are they trying to achieve?
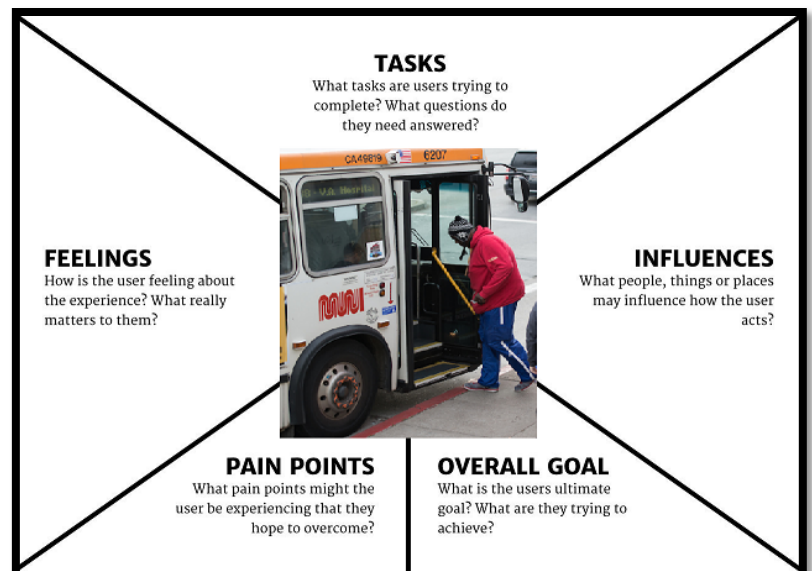
SFMTA Customer Complaint - Discourtesy

9. **Have participants write the customer's Tasks, Feelings, Influences, Pain Points, and Overall Goals for the given scenario on individual Sticky note notes, and have them place the sticky notes in the corresponding section of the empathy map**. Encourage participants to write quotations based on what they imagine the customer might say or think in the scenario. One idea/quote per sticky note.. Give 10 minutes for participants to write sticky notes. . Use the question list below to prime participants' thinking.
10. **When the maps are complete, have small groups report out to the whole group.** Give sufficient time for each group to show the whole group what they discovered.

Questions to ask participants
1. Ask a broad question to help unpack everyone's thoughts and assumptions ("Why would someone go to the DMV?)
2. What environment are the users in when using your product / in this scenario?
3. Are they having fun, or do they want to get it over with?

4. What's their life like outside of using the product today?
5. What kind of day might they be having?
6. Specific to Pain Points:
   a. What keeps my customer up at night?
7. Specific to overall goals:
   a. What motivates my customer to get up in the morning?
8. To help clarify a participants' answer to your questions, ask, "Is this a positive or a painful experience for the customer?"

Hints

- Define empathy to your client.
  - Empathy is vicariously <u>experiencing</u> someone else's feelings, thoughts, or attitudes.
  - Empathy is stronger than sympathy, because you are putting yourself in the other person's shoes to understand their feelings.
- If possible, use an actual customer in your process to be at the center of the empathy map. For example, use stock MTA photos of customers boarding Muni buses along with actual customer complaints.
- If you do not have the time/supplies, you can quickly hand draw empathy maps on flip chart paper or a white board.
- Pay special attention to pain points in the exercise. Do not get stuck on participants' answers to other empathy map categories as long as it is close, but DO pay attention to all pain points. This is where you will see future process improvements being made.

Example scenarios

- **SFMTA Customer Complaints.**
  - SFMTA vehicle did not stop: "The bus passed me, he hesitated, he passed me up, I'm sitting right at the bus stop with a walker. He noticed it, and I was walking to him and he kept going. He did slow down, and he sort of slowed down a bus length past the bus stop. I yelled at him and he probably heard me. Rather than electing to wait for me he proceeded on."
  - Discourtesy from employee: "My friend and I were getting on the bus and I thought I dropped something so I turned around and the driver slammed the door on me. I told him he slammed the door on me and he said that I was taking my time getting on the bus and he started screaming at me. He stopped the bus and told us to get off and he was calling Muni."
- **CalFresh clients**
  - Amanda is a first time CalFresh client who is also a single mom of 3 and working full time. She is calling about the status of her application, as she recently submitted her application in person and did not receive any confirmation about where it is in the approval process. It has been two weeks since Amanda submitted her application and she doesn't know what to do next to make sure her application was received.
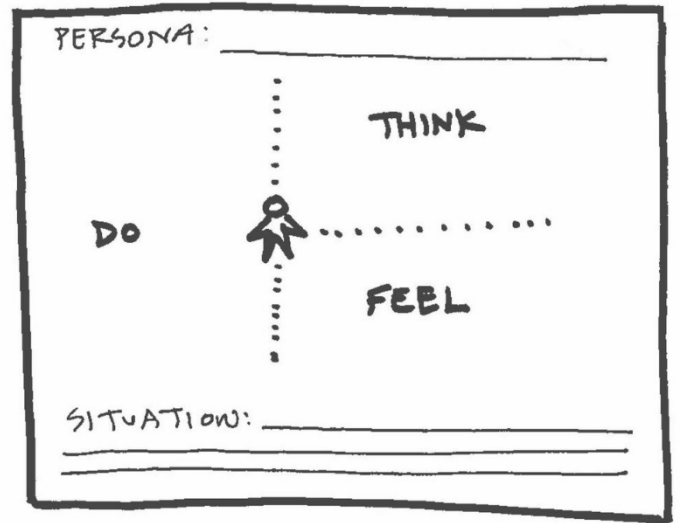

Client picture from CalFresh example (Amanda)
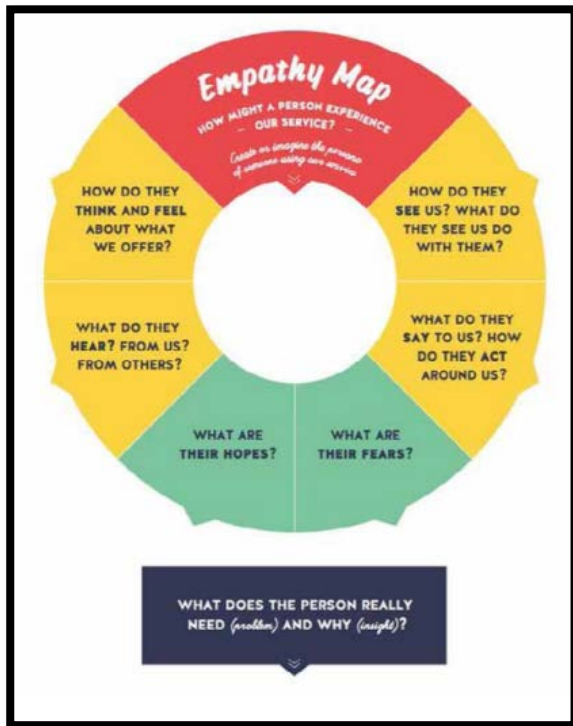
Empathy Mapping

Empathy Maps Formats

The shape, topic areas, and questions on an empathy map can all be adapted to specific project needs.
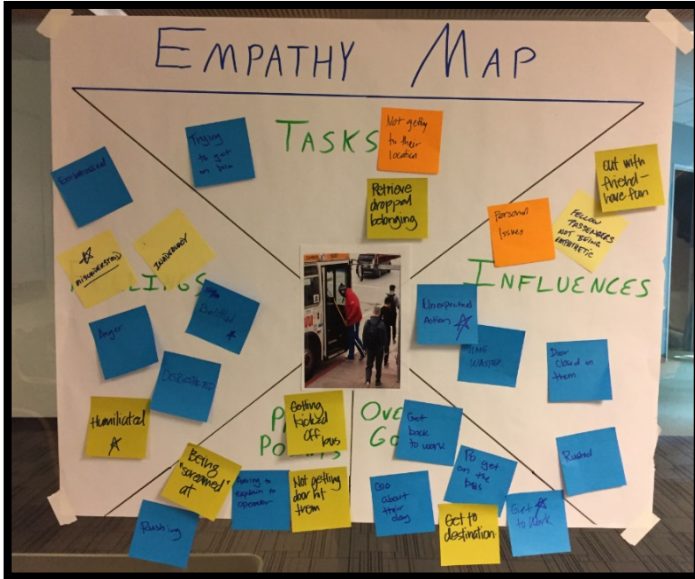
SFMTA Customer Complaint - Discourtesy (Completed)

Simplified Empathy Map

Circle Empathy Map

Circle Empathy Map - Completed

Five Whys

## What is a <u>five whys exercise</u>?

A five whys exercise is a question-asking technique to help participants get to the root cause(s) of an issue. The idea is that when you ask "why" five or more times about a problem, your answers will lead you to the root cause of an issue.

When should I use it?

- When a team needs to move beyond assumptions about why a problem is occurring
- When a team is stuck on blaming people rather than the process
- When a team isn't sure why a problem is happening
- When you suspect that the problem is being caused by something far upstream where the problem manifests itself
- You want to identify a specific root cause that is *deep and narrow*. (For problems that may have multiple more obvious causes, a fishbone diagram is a better tool.)

How do I facilitate or create it?

1. **Choose a problem to focus on and write the problem down at the top of a large sheet of flipchart paper**. (Note: if you have many problems and don't know where to start, you can use the Impact-Effort Matrix.)
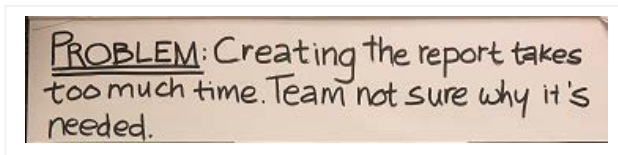

2. **Ask yourself "why is this problem happening?"** Write down the answer to the problem. Draw an arrow between the written problem and the answer to signify that the two are connected. If you have more than one reason, create a branching fishbone diagram and continue the five whys exercise with each branch of the diagram.
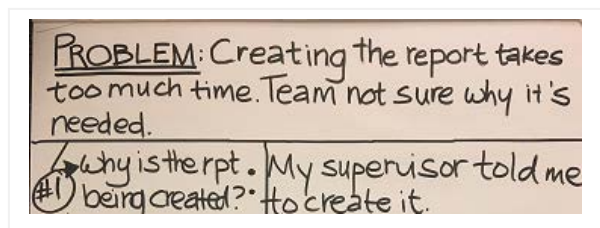
3. **Then, ask yourself "why" about the answer you provided to the first problem**. Continue this process until you have asked "why" five times, if necessary.
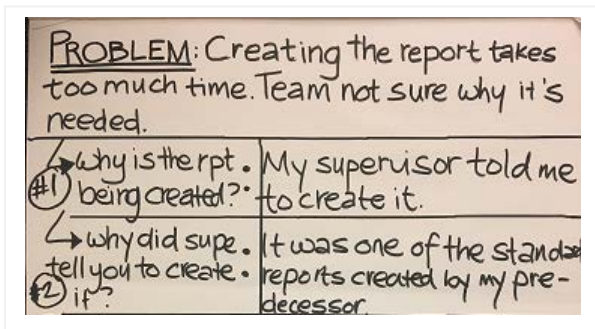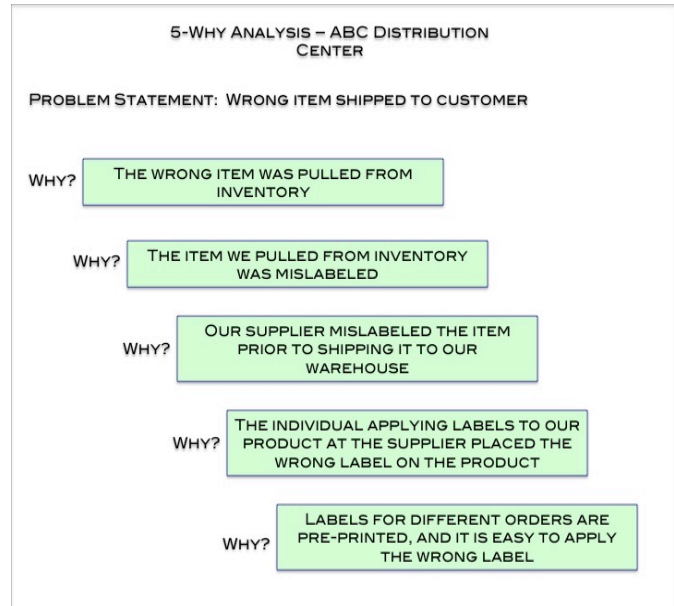

4. **If the final root cause of your diagram is process-based rather than people-based, you may have found your root cause**. If your root cause blames *people* in the process, continue asking why until it leads you to a root cause that is process-based. For example, "Zach failed to perform scheduled maintenance on his truck" is a poor root cause. Continue asking, "Why did he not perform the scheduled maintenance?" You will eventually find process problems: unclear instructions, lack of standard work, supervisory practices that don't prioritize maintenance, etc.

5. **Debrief with team**. Have a team member read through the ideas. If you have a branching diagram, review each branch and decide with team if they think they've found the root cause or causes.

6. **Capture diverse voices.** If there are other staff (or customers) who are involved in the process, but not part of the exercise, you might run the diagram by them to see if they have other ideas.
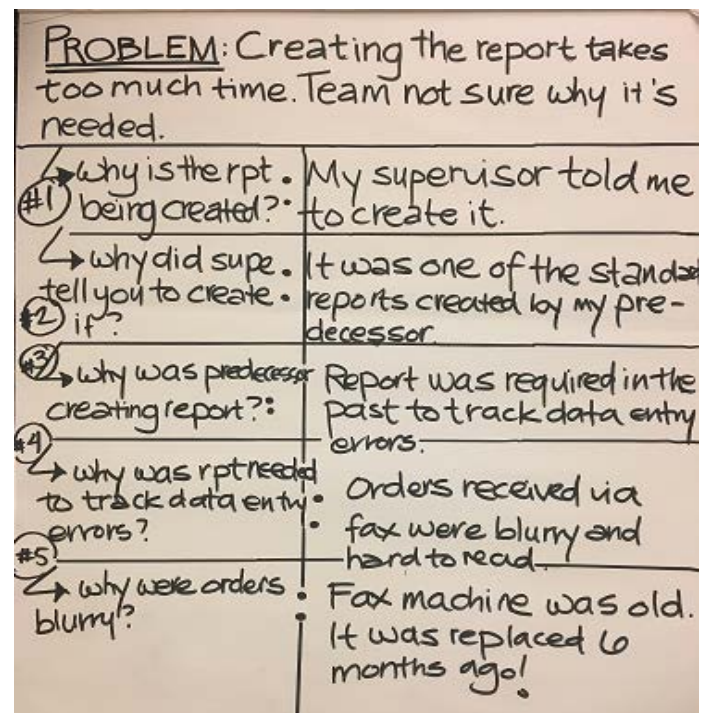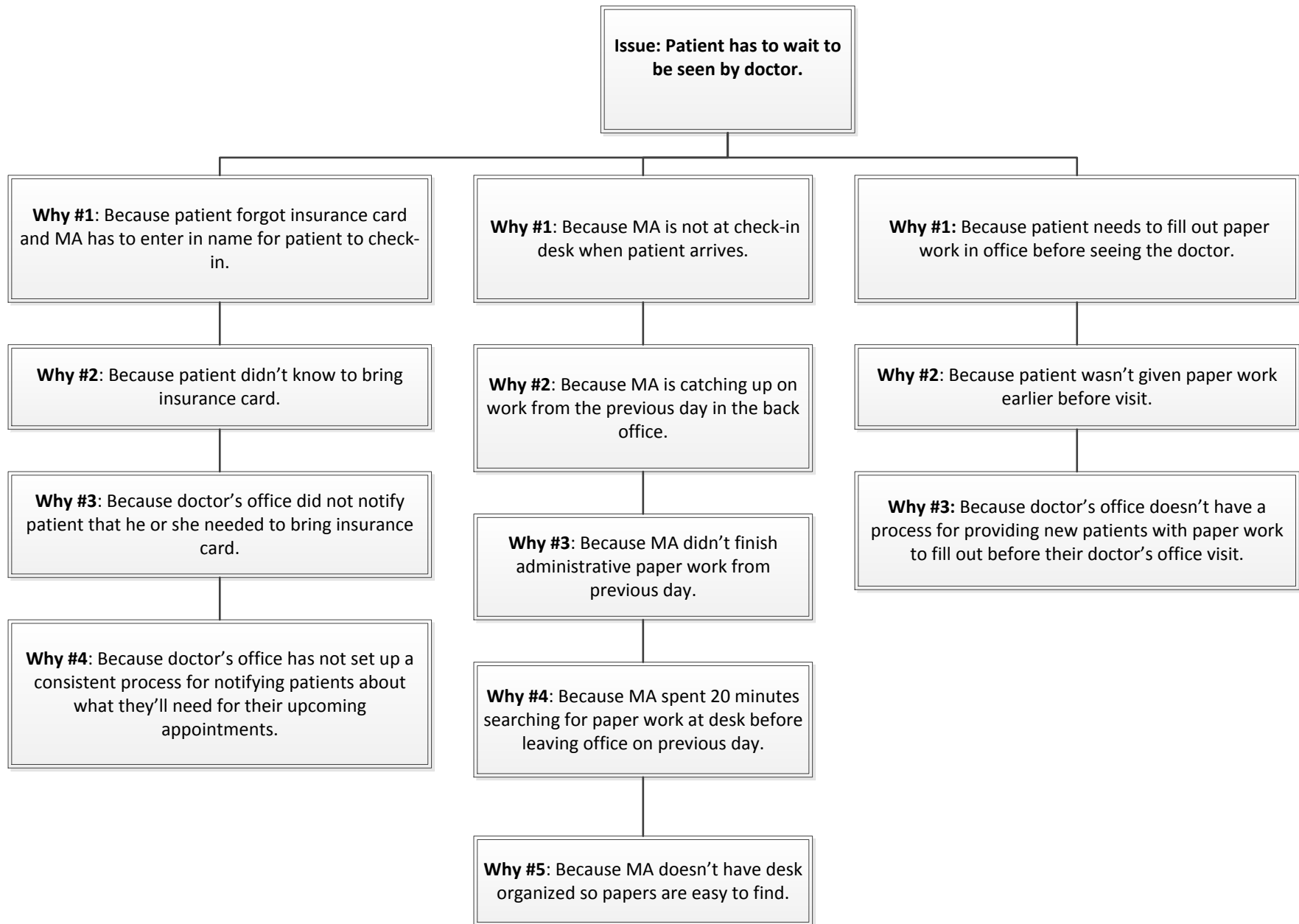
Hints

- If you find that your problem has multiple categories of root causes, then use a fishbone instead.
- While the team may have consensus around a few major root causes (repeated stickies), it's important to also consider root causes identified by only a single team member. Sometimes these are a result of good out-of-the-box thinking.
- Focus the 5 Why's on a line of questions related to a topic that the team has some control over. For example, if you conduct 5 Why's on why staff are always late to a staff meeting, don't go down a line of questioning that is about BART.

5-WHY ANALYSIS – ABC DISTRIBUTION CENTER

PROBLEM STATEMENT: WRONG ITEM SHIPPED TO CUSTOMER

WHY? THE WRONG ITEM WAS PULLED FROM INVENTORY

WHY? THE ITEM WE PULLED FROM INVENTORY WAS MISLABELED

WHY? OUR SUPPLIER MISLABELED THE ITEM PRIOR TO SHIPPING IT TO OUR WAREHOUSE

WHY? THE INDIVIDUAL APPLYING LABELS TO OUR PRODUCT AT THE SUPPLIER PLACED THE WRONG LABEL ON THE PRODUCT

WHY? LABELS FOR DIFFERENT ORDERS ARE PRE-PRINTED, AND IT IS EASY TO APPLY THE WRONG LABEL

EXAMPLE OF A 5 WHY'S EXERCISE

Issue: Patient has to wait to be seen by doctor.

Why #1: Because patient forgot insurance card and MA has to enter in name for patient to check-in.

Why #1: Because MA is not at check-in desk when patient arrives.

Why #1: Because patient needs to fill out paper work in office before seeing the doctor.

Why #2: Because patient didn't know to bring insurance card.

Why #2: Because MA is catching up on work from the previous day in the back office.

Why #2: Because patient wasn't given paper work earlier before visit.

Why #3: Because doctor's office did not notify patient that he or she needed to bring insurance card.

Why #3: Because MA didn't finish administrative paper work from previous day.

Why #3: Because doctor's office doesn't have a process for providing new patients with paper work to fill out before their doctor's office visit.

Why #4: Because doctor's office has not set up a consistent process for notifying patients about what they'll need for their upcoming appointments.

Why #4: Because MA spent 20 minutes searching for paper work at desk before leaving office on previous day.

Why #5: Because MA doesn't have desk organized so papers are easy to find.
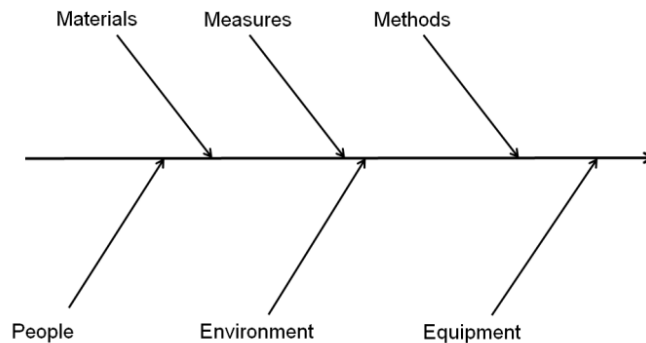
Fishbone Diagram

What is a fishbone diagram?

A fishbone diagram shows multiple root causes of a problem. The problem is shown at the head of the fish, and branches of the diagram (the "fishbones") are categories of causes. The original six categories (measures, people, materials, environment, methods, and machines) were intended to encompass all possible causes of a problem.

When should I use it?

- When you suspect that multiple issues may be contributing to a problem
- When a team is stuck on only one solution and needs to broaden their thinking
- When you have many people who can contribute ideas
- After process mapping, to identify possible causes of an obstacles on a specific process step

How do I facilitate or create it?

1. **Draw your fish**. The basic categories are measures, people, materials, environment, methods, and machines. You can use different categories if you prefer or leave the fishbones blank and fill in from categories later.

2. **Choose a problem to focus on and place at the head of the fish**. If you have a process map with identified obstacles, you can start with a pink sticky (obstacle) from a problematic process step.
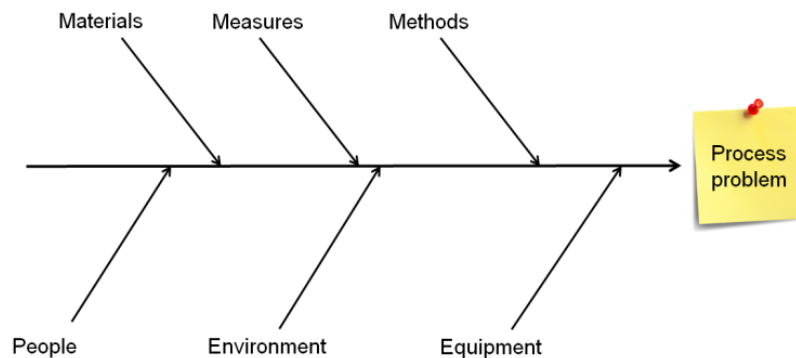
3. **Have the team brainstorm**. Everyone should have sharpies and sticky notes. Ask the team, "What are all the issues that might contribute to this problem?" Encourage everyone to come up with as many possible solutions as possible, one per sticky. Quantity over quality is valuable here.

4. **Encourage thinking along new lines**. During brainstorming, ask the team to broaden their thinking from what they assume the problem is. "Is there anything about the form itself that could be a problem? What about the physical layout of our office? What about how we communicate with each other?"

5. **Categorize ideas**. Get volunteers to sort everyone's ideas into categories. It is not necessary to fill every bone of the fish. If you began with a blank fishbone, give labels to the categories that arose naturally.
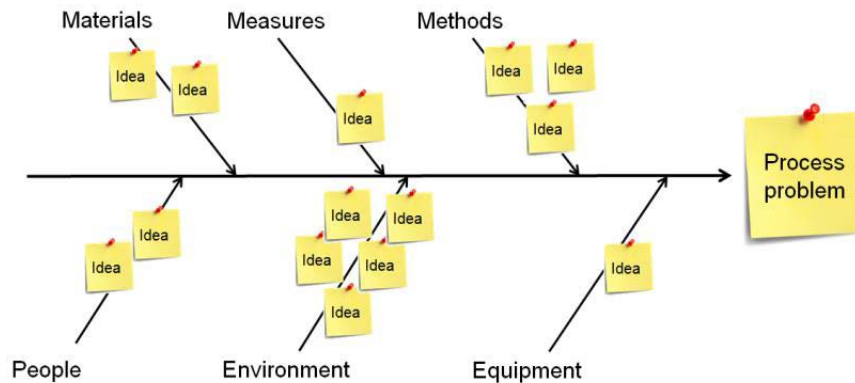
6. **Debrief with team**. Have a team member read through the ideas. Where did the team begin to think differently about possible causes? Are some of these root causes easier to fix than others? Which are in your control vs. not in your control?

7. **Capture diverse voices.** If there are other staff (or customers) who are involved in the process, but not part of the exercise, you might run the diagram by them to see if they have other ideas.

Hints

- Problem categories on your fishbone diagram can become rows for tracking errors on a tally sheet (see toolkit entry for tally sheets).
- Problems identified on the fishbone could be prioritized on an impact/effort matrix
- While the team may have consensus around a few major root causes (repeated stickies), it's important to also consider root causes identified by only a single team member. Sometimes these are a result of good out-of-the-box thinking.
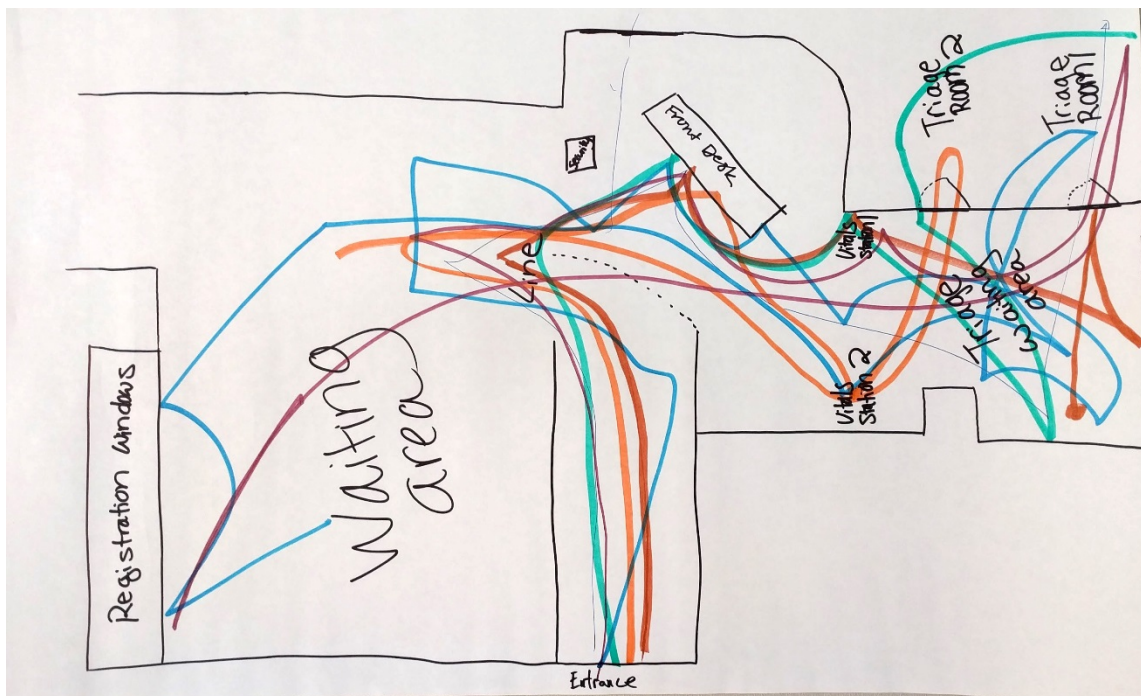
Spaghetti Diagram

What is a <u>spaghetti diagram</u>?

A spaghetti diagram, or spaghetti map, is a visual representation of physical space using a continuous flow line tracing the path of an item or person through a process. The continuous flow line enables process teams to identify movement and redundancies in the process and find opportunities to reduce motion and other obstacles. The diagram is intended to show:

1. The layout of the work area
2. The motion of how customers, staff, or objects move through the process
3. Unnecessary movement
4. Better work space layouts to minimize motion or other obstacles

Figure 1. Spaghetti diagram of patient movement at the former San Francisco General Hospital Emergency Department. Each color represents one patient's movement through the check-in and triage process.

SFGH E.D. spaghetti diagram highlights:

- Patients enter a narrow hallway and cannot see the front desk until they reach the end. Several patients stopped when they got to the end of the hallway and looked around, unsure where to go. The sign for the check-in line was not clearly visible to some patients.
- Two patients had to register before they could be sent to triage. They waited in line for the front desk, then talked to the front desk person and then were sent to the registration windows.
- This map does not document the motion of patients after triage, which could include waiting in the main waiting area.
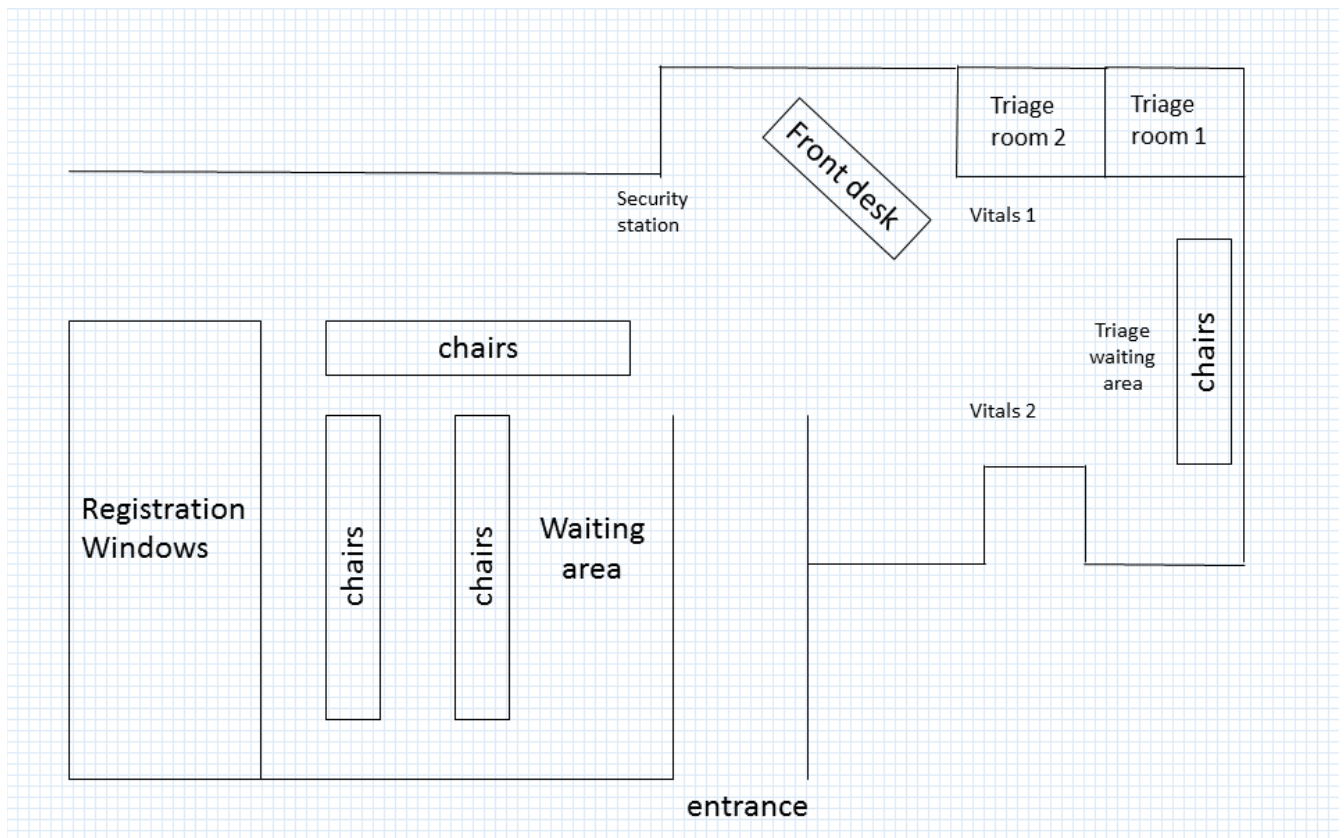
Spaghetti Diagram

When should I use it?

- **When there is a lot of movement in the process** – of customers, staff, and/or items such as documents or materials. For example: customers applying for public benefits in person.
- **When you believe that physical layout is inefficient or creates obstacles in the process**. Does the mechanic have all the tools she needs for her work close at hand, or does she have to travel across a room to retrieve them? A spaghetti diagram can visualize such movement.
- **When customers or staff are confused about where to go to conduct certain activities**. For example, Library staff at the Main branch are often asked "directional" questions – questions such as "where is the history section?" or "where is the bathroom?". The library could spaghetti diagram patron movement to better understand where to position signs or other forms of assistance.
- **When a process travels electronically or physically from one building or a floor of a building to another.** For example: a building permit application traveling from one City department to another
- **Before a work space is designed or re-designed.** For example, when Laguna Honda renovated two clinics, they used a Lean approach to create a more patient-centered design, minimizing patient motion and bringing more services to them rather than having them walk around multiple floors of a building.
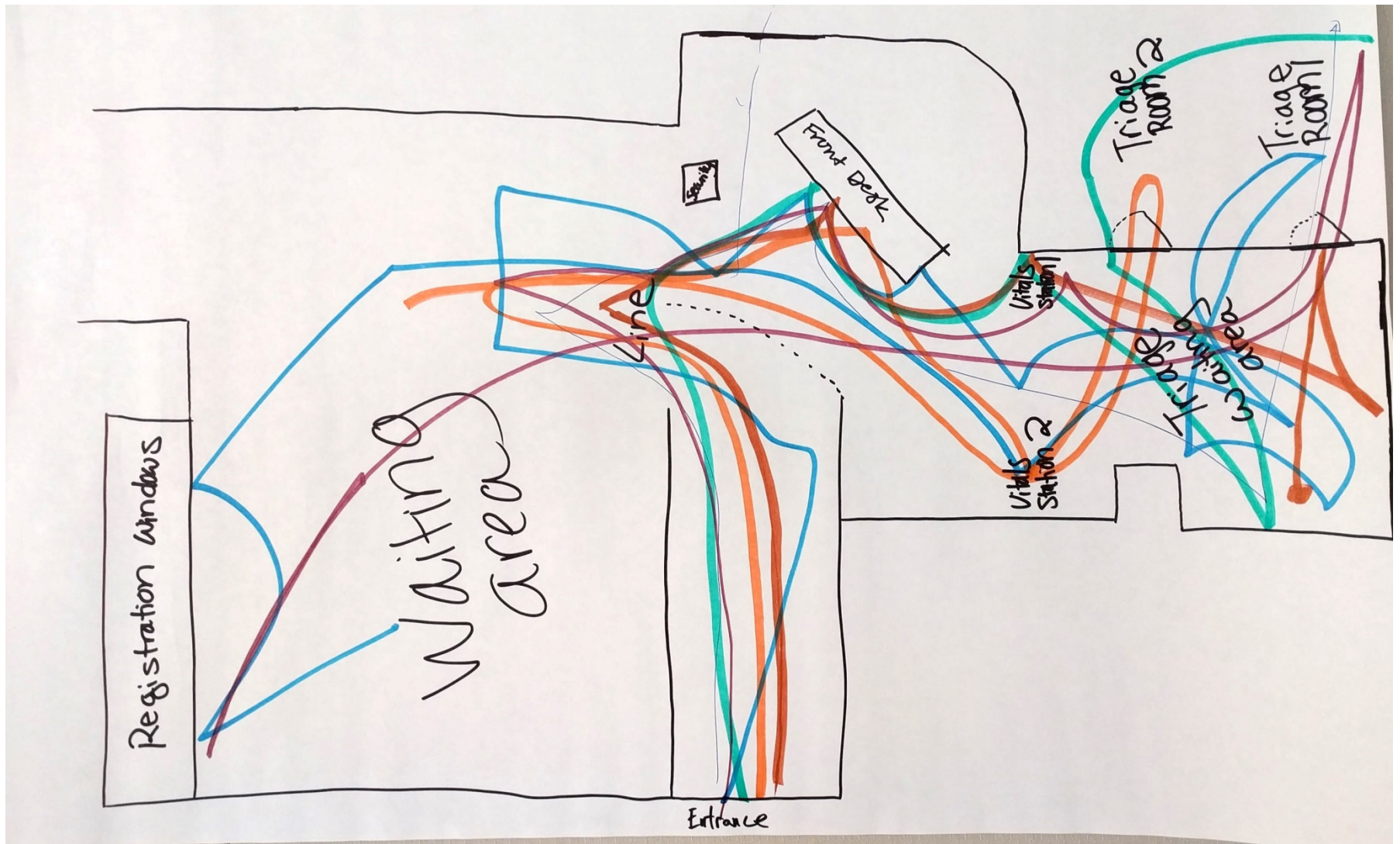
How do I facilitate or create it?

1. **Draw the layout of the work space along with the fixed objects**
   a. Use a piece of paper – grid paper is helpful – and create a simple high-level drawing the workspace layout. You want to document furniture and equipment as well.
   b. If a blueprint or plan of the area is available, you can use that, so long as it is sufficiently legible.

2. **Draw a single, uninterrupted line to trace the path of the customer, staff person or object being followed.**
   a. Hold your pen down on the paper from the time the person or object begins the process to the time they end.
   b. If you want to document the movement of multiple customers, staff or objects, you can use different color markers/pens to denote each individual or object.

3. **Note times of each movement.** If possible, time each movement and note them on the paper.

4. **Note distances between movements.** If possible, estimate the distances between each movement

5. **Analyze the diagram**. Some key questions to ask include:

   a. How does the customer feel when going through the motions?
   b. Are all motions equally important?
   c. Are there breaks in motion; why?
   d. What steps can be eliminated?
   e. How might the team redesign the space to reduce movement?
   f. Can a 15-year old understand what is happening on the diagram?

Registration windows

Waiting area

Line

Front desk

Security

Vitals station 1

Triage waiting area

Vitals Station 2

Triage Room 2

Triage Room 1

Entrance

ZSFG Emergency Department Patient Intake and
Triage Process – Spaghetti Diagram – February 2016

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Communication Circle

What is a <u>communication circle</u>?

A tool that provides a visual representation of the communication flows that occur between departments, staff, and customers in a process. The Communication Circle is helpful for:

(1) Identifying the number of transactions and handoffs of information in a process;
(2) Defining the various types of communication in a process;
(3) Identifying possible bottlenecks in a process;
(4) Identifying the need for centralized communication in a process.

When should I use it?

- When you suspect there are bottlenecks or too many handoffs in a communication process.
- When you suspect that there are unnecessary steps or participants in a communication process
- When you are unclear about how communication flows in a process and who is involved in the communication flows
- When process participants report frustration with miscommunication
- When no one person, team, or unit understands or controls the flow of communication about a process

How do I facilitate or create it?

1. **Draw a large circle on a large piece of paper**. It's helpful to use large flip chart paper.

2. **Write the names of all the people or part of the organization involved in the process around the outside edge of the circle**. Space the names of people or divisions evenly around the outside of the circle. Be sure to include the customer and external stakeholders as well.

3. **Start with the first step in the process, and draw a line connecting the first person or division with the second person or division with whom they communicate in the process**. It can be helpful to number each line so you can follow the communication flow chronologically.
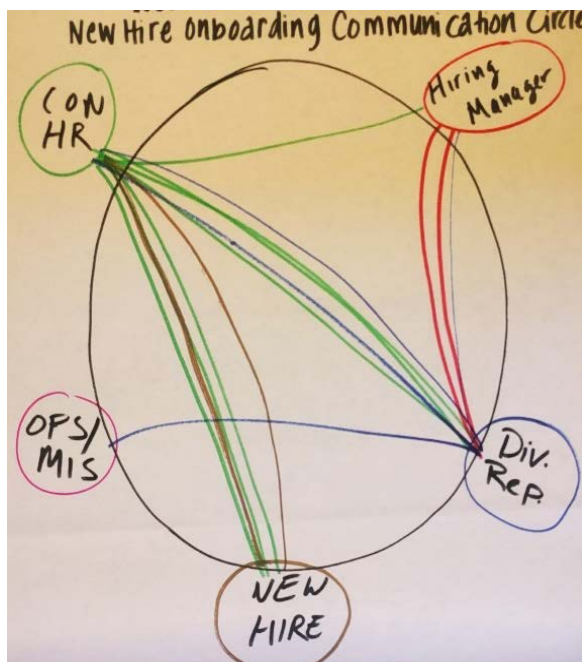
The example provided visualizes the communication flow for the new hire on-boarding process in the City's Controller's Office. The Controller's Office Human Resources (CON HR) staff initiates the process by contacting the Hiring Manager. That initial communication is represented by a green line connecting the Hiring Manager to CON HR (labeled 1).

Different colors were used to signify the originator of the communication. Communications initiated by the Division Representative (Div Rep) are blue. Communications initiated by the Hiring Manager are red; and brown represents the New Hire.

4. **Analyze the results**. Use this time to facilitate a discussion about what group members realized after doing the communication circle. Count how many people are involved in the process, how many different types of communication are represented in the circle, and how many lines of communication there are. Assess the circle for excess movement, waiting, or backlogs. Ask participants, "What strikes you about this communication circle? What do you notice? Are there bottlenecks? If so, where? Are there any transfers of information that seem redundant or unnecessary?"

5. **Debrief with the team**. Using the results of your analysis, discuss possible improvements to the current communication circle. Ask participants, "Okay, so can we eliminate any of these steps?" Ask participants if there are ways to reduce: (1) the number of people involved in the process, (2) the types of communication used in the process (duplicative communication channels), or (3) the amount of communication occurring in the process. "Could A give the info directly to C without going through B? Who really needs to be involved in this meeting / copied on this email?"

6. **Capture diverse voices.** If there are other staff (or customers) who are involved in the process, but not part of the exercise, you might run the diagram by them to see if they have other ideas.

7. **Draw a new "future state" communication circle**. The new communication circle design should incorporate the solutions your group discussed during step 5.

Hints

*   If group members disagree about how to improve a communication problem they discovered during this exercise, try completing a Five Whys or Fishbone exercise on the problem. This exercise usually helps teams that have differing opinions come to a common understanding of the root causes of a problem.
*   A future-state communications circle could accompany a future state process map. Make sure that any future state materials the improvement team develops align with one another.
*   If the process communication is a mess, the current state communication circle will look like a mess, too – that's okay! It will provide a vivid contrast to a cleaned up future state!
*   If group members are having trouble accepting the new communication circle, try framing it as an experiment. See if team members will accept the new communication structure for a few weeks rather than as a permanent change.
*   Remember that change is hard for most people. See the change management resource guide for how to prepare people for and support them through change.

Tally Sheet

What is a tally sheet?

A tally sheet is a simple, low-tech tool that you can use to count and visually represent the frequency of an event or error in a process.

When should I use it?

- When you want to gather data about the type of problems occurring
- When you want to understand what kind of errors, problems, or complaints occur most frequently compared to other errors and problems
- When doing a rigorous analysis of data is too time consuming or not feasible, and you want staff to get a quick count by hand
- When processes or events need to be monitored and recorded as they occur

How do I facilitate or create it?

1. **Decide which obstacles you want to observe.** Write down the obstacle(s) you want to track on a piece of paper and make sure the team using the tally sheet understands what each category means.
2. **Decide the time horizon over which you want to track the obstacle(s) on your tally sheet**. You can decide to keep a tally of the obstacle over the span of one day, a week, a month, or even a year.
3. **Make sure you know who owns the tally sheet**. You don't want two different people marking the same instance twice!
4. **Post the tally sheet** in an area where you or the tally sheet owner can easily add tally marks to the sheet throughout the work day.
5. **Begin observation**. Each time that you notice the obstacle or event occurring, write a tally mark next to the obstacle or event category to which the observed obstacle or event belongs.
6. **Identify events with unusually high or low occurrences**. Decide whether you want to analyze those occurrences further.

TYPE OF COMPLAINT	FREQUENCY
Personal details incorrect in database	IIII
Error in salary calculation	IIII
Leave history not updated	HHH HHH HHH
Delayed training arrangements	I
Pension not remitted	III
Incorrect tax calculation	I
Working conditions not favourable	III
Other	

Hints

- Tally sheets don't always have to come in the form of a hard copy sheet. You can track the frequency of an event by putting beans in a jar every time an event or obstacle occurs! Get creative with the way you implement tally sheets; tailor it to your team's needs.

- Consider a tally sheet to fill in gaps in your metrics or data. If the database does not allow you to track errors easily, can a staff person track errors manually for a week and report back the findings? You can easily replicate such tracking after solutions have been implemented.

Impact-Effort Matrix

What is an <u>impact - effort (I/E) matrix</u>?

An impact-effort matrix is a decision-making tool that helps teams or individuals choose the best option based on relative impact and effort. Level of impact (or how much an option will help) is plotted on the vertical axis and level of effort (or implementation difficulty) is plotted on the horizontal axis. Team members place their ideas on the matrix based on the level of effort (low to high) and the level of impact (low to high). This placement leads to ideas falling into four quadrants: quick wins, low-hanging fruit, major projects, and thankless tasks.
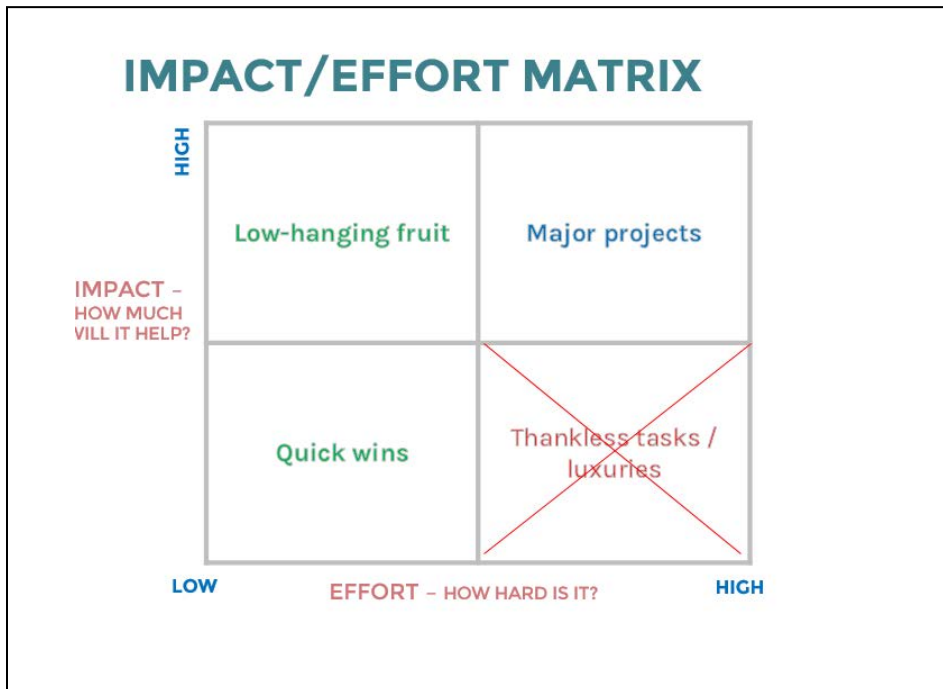
Quick wins: quick wins are projects that require little effort and have a lower impact relative to other projects. They fall in the lower left quadrant of the matrix. These tasks or solutions can be completed easily—these are your "Just Do Its."

Low-hanging fruit: ideas in the low-hanging fruit category will have a high impact and a low amount of effort. They fall in the upper left quadrant of the matrix. This is a great quadrant to prioritize because these projects take a relatively shorter amount of time to complete, but are some of the most impactful.

Major projects: major projects will have a high impact, but they'll take a lot of effort to complete. They fall in the upper right quadrant of the matrix. In many cases, these projects are multi-year projects that require many people to complete. If you find that many of your projects fit in this category, try shrinking the change! Take on a smaller portion of the larger project.

Thankless tasks / luxuries: thankless tasks are those projects that have low impact but high effort. They fall in the lower right quadrant of the matrix. These ideas are a pain, and they take time away from other, more impactful ideas. If you can, avoid them!
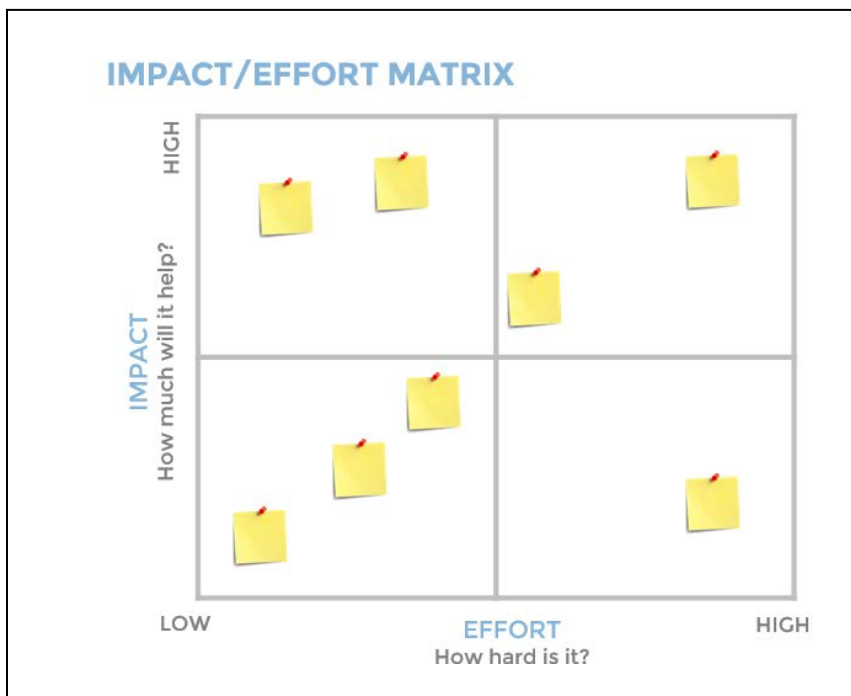
Impact-Effort Matrix

When should I use it?

- After you've completed the Gap Analysis (root cause analysis) and brainstorming portions of the A3
- When you have a long list of ideas and need to prioritize them
- When you are choosing which ideas should become an experiment or go into your action plan
- When you have identified multiple root causes for a problem and need to choose which problem to focus on first
- When team members are undecided about which problem, approach or solution they should pursue
- When you want to prioritize meeting agenda items (low-hanging fruit items can be discussed early in the meeting, while thankless tasks might be relegated to the end of the meeting agenda if there is extra time)

How do I facilitate or create it?

1. **Draw a vertical and horizontal axis on a large sheet of flip chart paper**. Write "impact" on the vertical axis and "effort" on the horizontal axis.
2. **Draw a horizontal line half way up the vertical axis, and a vertical line half way across the horizontal axis.** These lines will define your matrix quadrants.
3. **Ask team members to assess the effort and impact for each solution.** Team members should then place their solutions (preferably written on post-it notes) on the matrix by relative impact and effort. Consider having the team do this silently, as groups can get derailed in discussions over minute details.


4. **Debrief with team**. Are the ideas placed in the right spots? Which ideas should we prioritize based on this matrix?

Impact-Effort Matrix

Hints

- You can adapt the impact-effort axes to allow team members to analyze ideas based on other criteria, such as cost or time.
- Most groups under-estimate the effort needed to implement an idea. When choosing ideas to implement, if you suspect the idea is miscategorized, prompt the group to discuss it briefly: "I see that we placed 'Purchase a new computer system' under high-impact, low-effort. Does that make sense to the whole group? What are the steps that would be involved in purchasing and implementing that system? Is it actually a major project?"
- You can use the impact-effort matrix to prioritize which problems to solve first
- You can use the impact-effort matrix to prioritize which ideas to implement first
- The I/E matrix is a flexible tool that can be used to help prioritize and make decisions in any situation
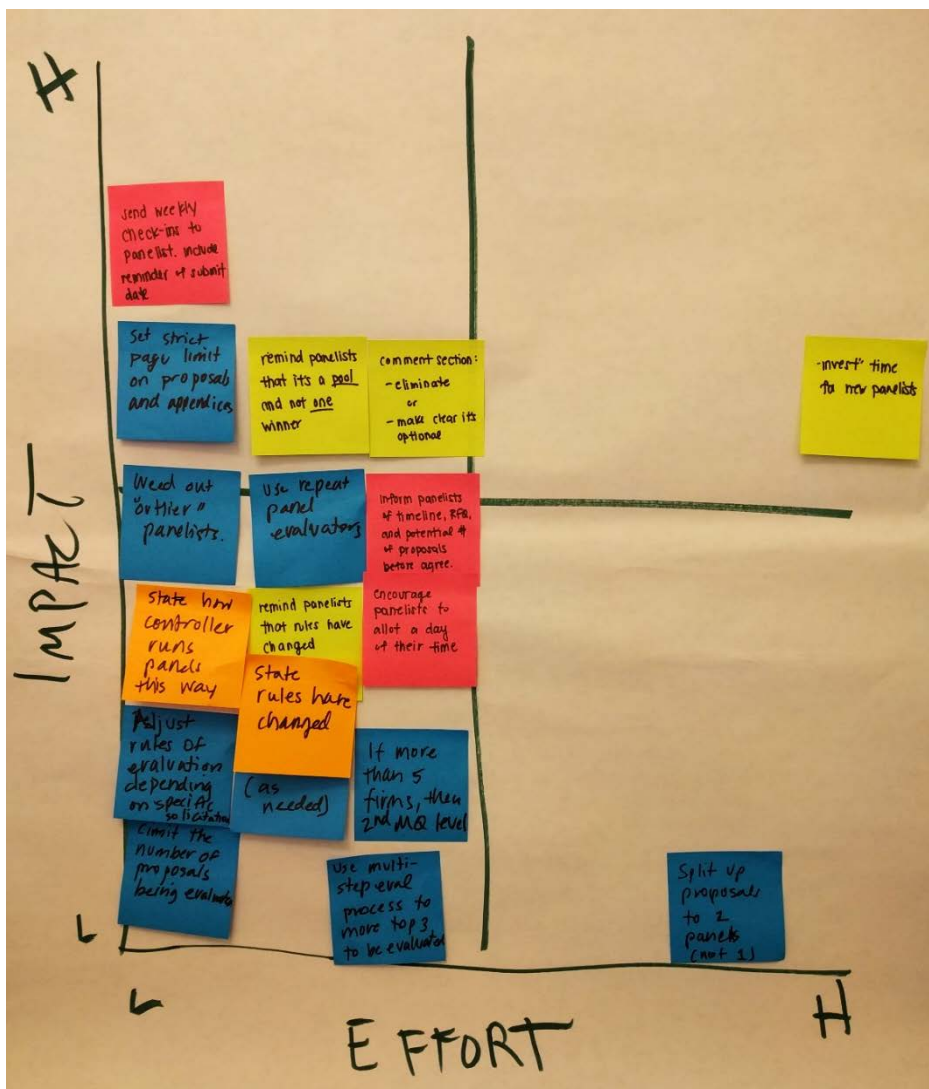
What is Change Management?

All change involving people requires behavior change, and for most people, change is hard. Change management is the process of helping people prepare for and move through change. It is key to successful process improvement. Many improvement efforts fail because the project team and employees impacted by the improvement are not fully prepared for the change.

When do I need it?

- Whenever people need to change their behavior in some way
- When people might be resistant to change or are already pushing back on ideas for change
- When you want to be sure that everyone is on board and your improvement project is successful

How do I facilitate it?

There are numerous approaches to change management. Some common approaches:

- Kotter's 8-step change model
- Lawson and Price model
- Switch framework (see page 2)

Hints

- More difficult or bigger changes require more thought and planning regarding change management
- It is helpful to think about how the change will be communicated to all stakeholders throughout the process and what training different stakeholders need. See pages 3 and 4 for communications and training templates developed by Kimberly Cates in the Controller's Office eMerge division.

Change Management

The Switch framework for guiding people through change - adapted from *SWITCH: How to change things when change is hard* – by Chip Heath and Dan Heath. 16-minute video explainer by the Heath Brothers available here (you must register to get access).

DIRECT THE RIDER	MOTIVATE THE ELEPHANT	SHAPE THE PATH
Present a rational justification for change	**Appeal to emotions**	**Make the change simpler to accomplish**
FOLLOW THE BRIGHT SPOTS	**FIND THE FEELING**	**TWEAK THE ENVIRONMENT**
Idea: What you're doing has probably been done before. If your staff or leadership is hesitant to change, show them how the change has been successful elsewhere. If you can't find an example, start small (see "Shrink the Change").	**Idea:** The core of change is behavior change. Connect the change to staff and customer pain points. Communicate to the emotional side, not the rational side. Don't lead with data. Lead with heart. Stories and visuals can be powerful tools.	**Idea:** Are people not changing because the physical or social environment encourages them to do the same thing? How can you change the environment to make it easier for people to change? Establish a downhill path to change.
Example: Lean process improvement was successful in Denver and that made it easier to adopt the program in San Francisco.	**Example:** The CDC's gut-wrenching anti-smoking media campaign led 1.6 million people to try to quit smoking and 100,000 people quit.	**Example:** Some jurisdictions automatically enroll residents into benefits they're eligible for. They can opt-out, but the default setting is opt-in.
SCRIPT THE CRITICAL MOVES	**SHRINK THE CHANGE**	**BUILD HABITS**
Idea: Identify and communicate the behaviors needed. Explain how the new process will work and what each person will do. Make it easy for people to do what they need to do.	**Idea:** Are staff overwhelmed? Rather than tackle the entire process, start with a small, relatively easy part of the process. Get quick wins to maintain engagement and momentum.	**Idea:** To change yourself or other people, habits must change. Habits tend to change when the social or physical environment changes. Link new habits to old ones: When you do X, do Y as well.
Example: Whole Foods printed a list of the most nutritious foods on the their grocery bags. It helped shoppers focus their attention. BTW: Kale, Chard, and Collard Greens are on top!	**Example:** Instead of sorting through the materials in their entire electrical shop, electricians at the Recreation and Parks Structural Maintenance Yard decided to focus on one of five rooms in the shop.	**Example:** Students were late to class so the teacher locked the door when the bell rang. Late students got stuck in the hallway, which was embarrassing, so they changed their behavior.
POINT TO THE DESTINATION	**GROW YOUR PEOPLE**	**RALLY THE HERD**
Idea: Show people where you're going by when. Show why it's worth pursuing. Goal should be achievable, and everyone should know when they've arrived and can celebrate. The clearer the destination, the clearer the paths to get there.	**Idea:** Create the expectation that failure along the way to the goal will happen. Help people have a growth mindset. Change doesn't happen linearly. There will be ups and downs. Focus on learning rather than winning.	**Idea:** Behavior is contagious. People are influenced by peers and social norms. Find the trend setters and get them on board first. Be sure to create a safe, supportive place for social minorities as well.
Example: Students entering first grade were not at kindergarten level. Teacher set goal that by year end, they would be third graders. The students were excited to become third graders and worked harder to achieve that goal.	**Example:** The City's successful online Business Portal was developed using an "Agile" approach. Rather than spend lots of time planning, the project moved through an iterative cycle of building, testing, learning, and refining.	**Example:** Britain's Behavioral Insights Team got delinquent taxpayers to pay their bill by sending them a letter that said they were in "the very small minority" of citizens who had not paid their taxes.

Communication planning tool

Who	What	When	Where	Why
Example: Controller's Office Hiring Managers	Written instructions for how to use new PeopleSoft Request to Hire module	June 1, 2017	Email dissemination and review during in-person trainings	New module goes live July 1. Need managers to understand how to use new module before Go Live.
Example: Job seekers	YouTube video on why working for the City is a great choice.	November 1, 2016	LinkedIn, YouTube, City's websites and social media	Need to attract more talent to the City's workforce; baby boomers retiring

Training Plan Tool

Who	What	When	Where	Why
Example: Controller's Office Hiring Managers	New PeopleSoft Request to Hire module	June, 2017	CON Training Room	New module goes live July 1. Need managers to learn and practice with new module before Go Live.

ONLINE LEAN RESOURCES

RESOURCE	WEBSITE
1) City and County of Denver Peak Academy	http://www.denvergov.org/content/denvergov/en/mayors-office/programs-initiatives/peak-performance/peak-academy.html
2) Lean Enterprise Institute	www.lean.org
3) Karen Martin Group	www.ksmartin.com
4) Catalysis	https://createvalue.org
5) Kaiser Permanente Garfield Innovation Center	https://garfieldcenter.kaiserpermanente.org/
6) Results Washington	http://www.results.wa.gov/
7) King County, WA Lean blog	https://leaninkingcounty.com/
8) Heath Brothers	http://heathbrothers.com/
9) 52 Weeks of User Experience	http://52weeksofux.com/

BOOKS WE'VE FOUND HELPFUL

TITLE	AUTHOR
1) The Toyota Way	Jeffrey Liker
2) We Don't Make Widgets	Ken Miller
3) Peak Performance	Brian Elms and J.B. Wogan
4) Managing to Learn: Using the A3 management process to solve problems, gain agreement, mentor; and lead	John Shook
5) Switch: How to change things when change is hard	Chip and Dan Heath
6) Decisive: How to make better choices in life and work	Chip and Dan Heath
7) This is Service Design Thinking	Marc Stickdorn and Jakob Schneider
8) The BPI Blueprint	Shelley Sweet