

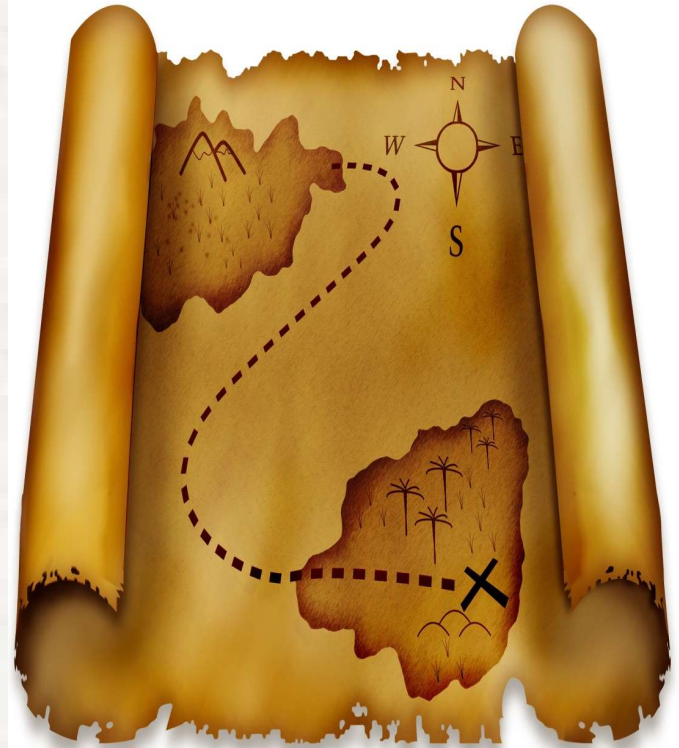
Current State Mapping

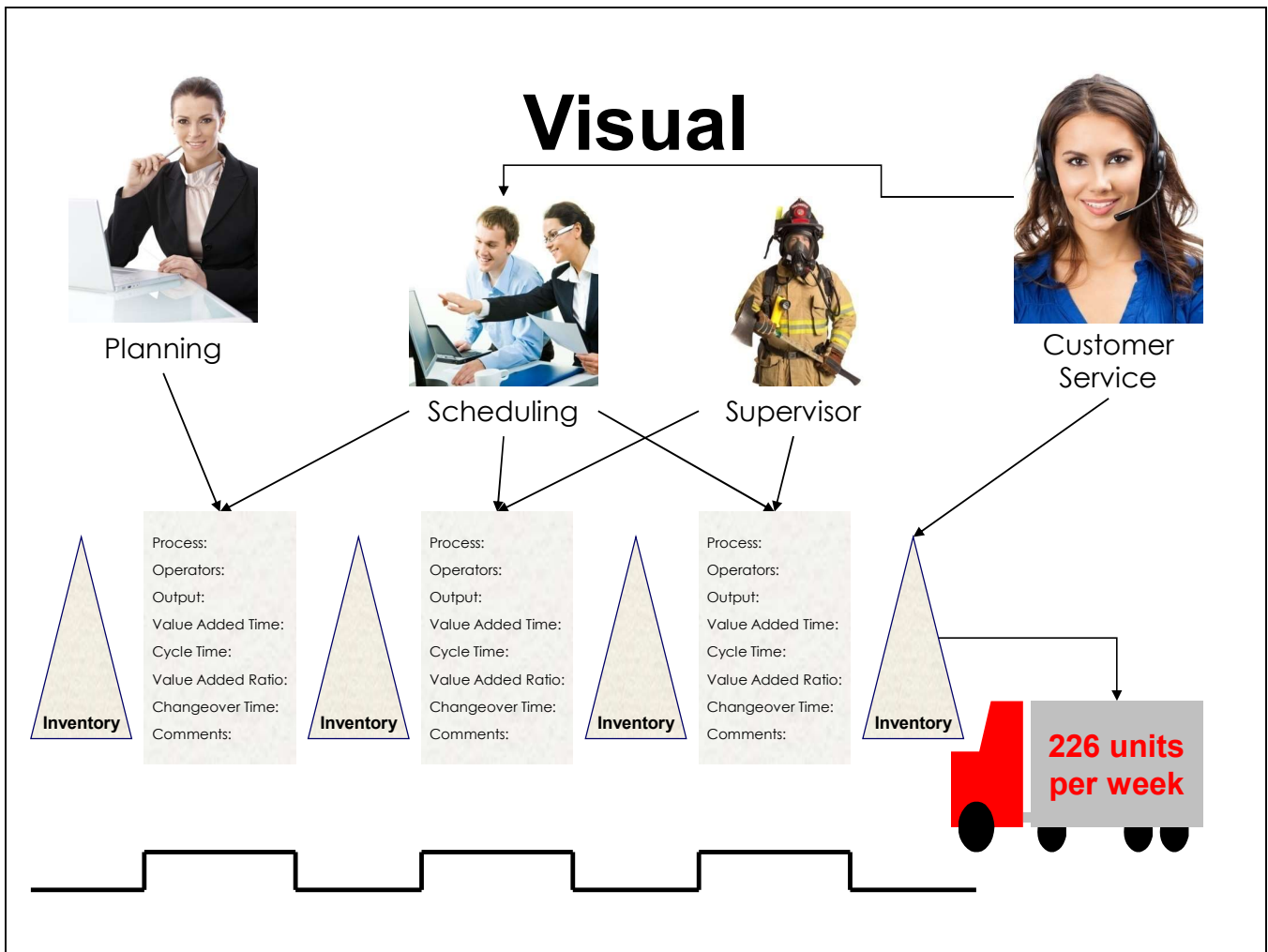


This is a step-by-step guide for creating a current state value stream map.

Value Stream Map

A visual representation of activities and flows of information, materials, and services required to accomplish specific objectives.





The map is visual.

- Activities
- Data for each activity
- Inputs
- Outputs

Across time along with productive time and nothing happening time.

Activities

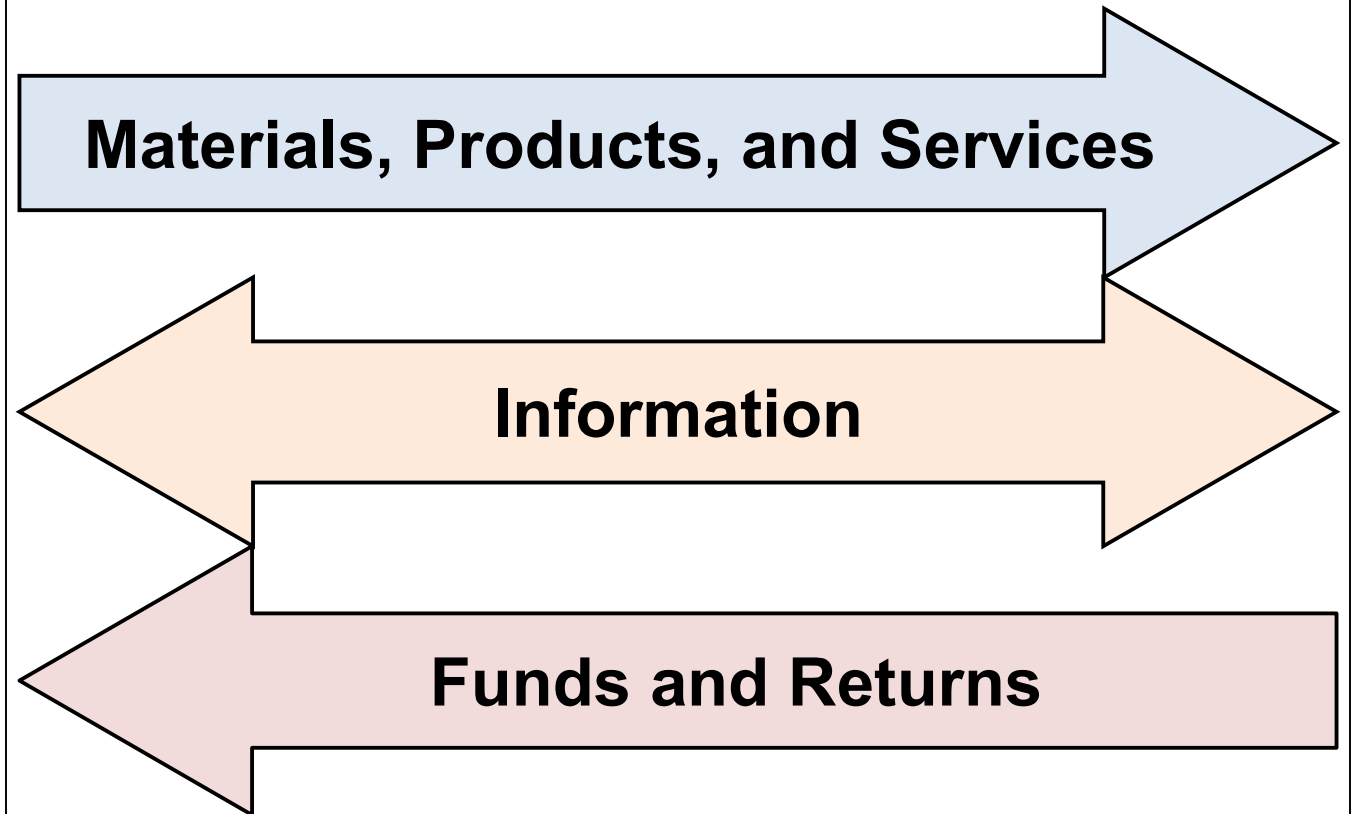
Value Add

Non-value Add

Business Value Add

The three types of value are included in each of the activities.

Value Stream Flows



Most maps need to show the flow of materials, products, services, and information.

Some maps need to show the flow of funds and returns

How Detailed?

A current state value stream map must be...

...at the level of detail that identifies the waste.



The level of detail varies, depending on the scope of the value stream you are working on.

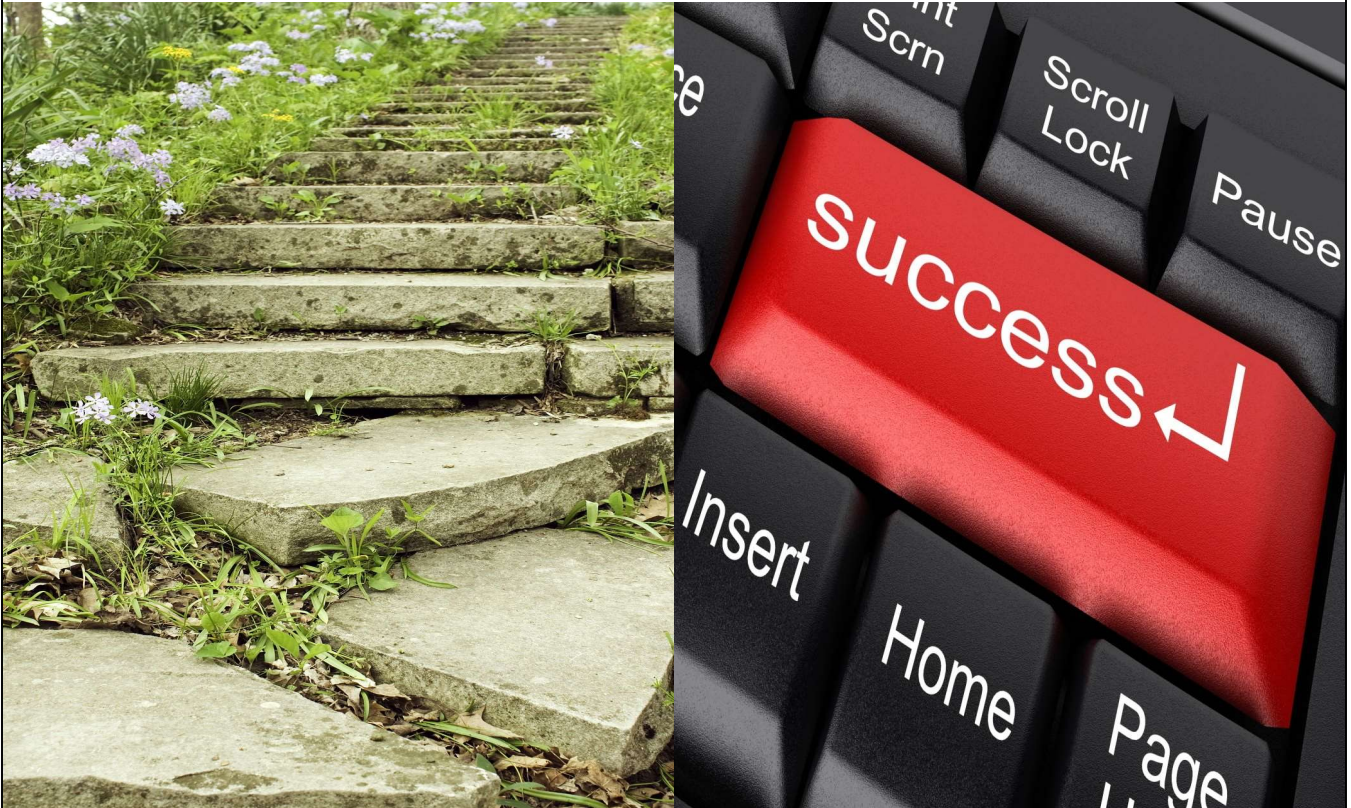
A map of your entire organization may show shipping as one activity with just one box on the map.

A map of shipping might show eight activities with one box for loading the trailer.

A map of loading the trailer might have six activities and six boxes.

You may hear stories of people making maps which extend out the door and down the hallway. This approach is questionable – the scope of that type of project is probably too big.

20 Steps to Success



Lean is systematic and creating a value stream map is also systematic.

There are 20 steps.

Steps 1 to 10



The first 10 steps involve defining the value stream that you want to map.

This should be fairly quick and designed to get everyone focused on the task at hand.

Repeat, this should be quick. Your very first one may take 30 minutes.

Don't overcomplicate and don't seek to get everything perfect.



The goal is – get everyone on the same page.

Let's get started.

1. Identify Mapping Team



Prepared By: *Who is on mapping team?*

Ask who should be on the team - Managers, Participants, Suppliers, Customers, etc.

Should planning and scheduling be on the team?

Should purchasing?

Should customer service?

Should marketing?

Should sales?

Value stream mapping is a team-based activity.

You will not become a “hero” by doing this alone.

6 to 8 people is about the right number.

2. Identify Value Stream



Value Stream Name: *What do you call it?*

Identify the value stream you are mapping.

Is it the red one or is it the blue one?

What name do you call it?

3 to 7. Create SIPOC

SIPOC

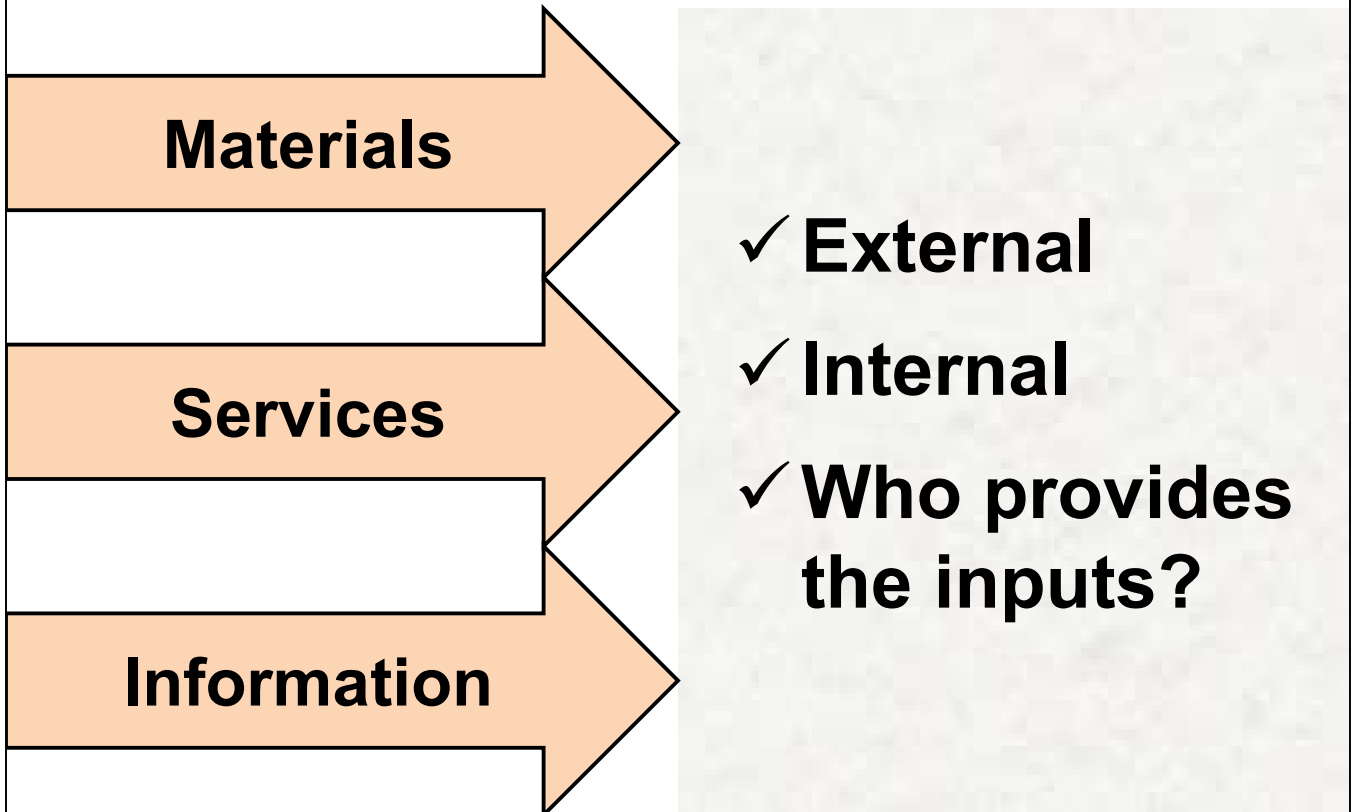
Suppliers	Inputs	Process	Outputs	Customers
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•

Steps 3 to 7 come from the tool called SIPOC - for suppliers, inputs, process, outputs, and customers.

For this tool, you examine your value stream and create a list of items for each of the categories.

Let's look closer at each step.

3. Identify Suppliers

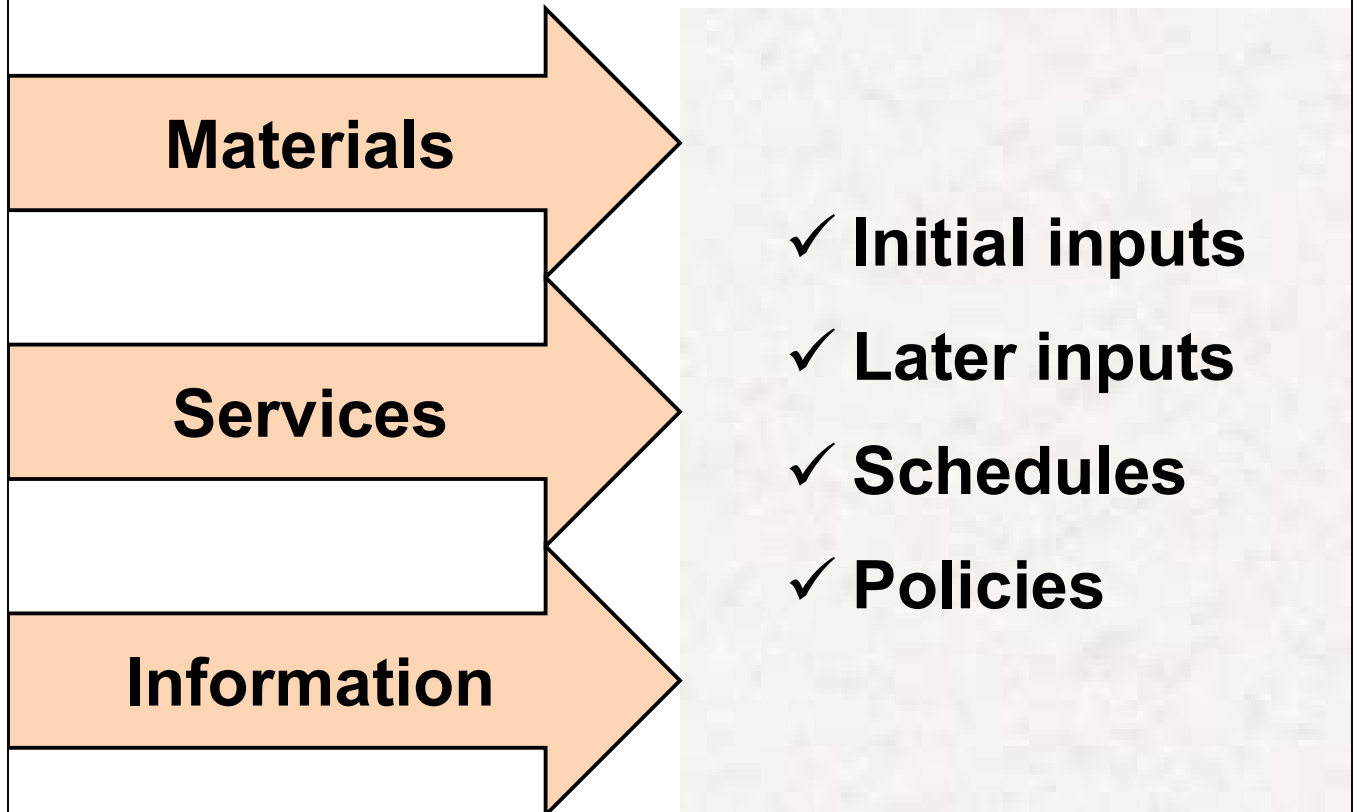


For suppliers, you can list all the suppliers of materials or information.

These suppliers can be external companies, internal departments, or some other source.

Not just the supplier of the initial input. What about the inputs that occur during the middle activities?

4. Identify Inputs



What are the inputs you get from the suppliers?

The materials and information at the beginning are easy.

What about materials and information that arrived during the middle of the process?

What about policy statements on managing work and priorities?

5. Identify Process

Steps

People

✓ **First Step**

✓ **Managers**

✓ **Middle Steps**

✓ **Workers**

✓ **Last Step**

✓ **Support**

Step 5 is to identify the process

List the steps and the people

6. Identify Outputs

- ✓ **Final outputs**
- ✓ **Middle outputs**
- ✓ **Reports**
- ✓ **Database updates**
- ✓ **Performance**

Products

Services

Information

Step 6 is to identify the outputs

The final output of a product, service, or information is easy.

What about the outputs that occur during the process? What about reports sent to others? What about data stuffed into the computer?

Are there performance measurements?

7. Identify Customers

- ✓ **External**
- ✓ **Internal**
- ✓ **Who gets the outputs?**

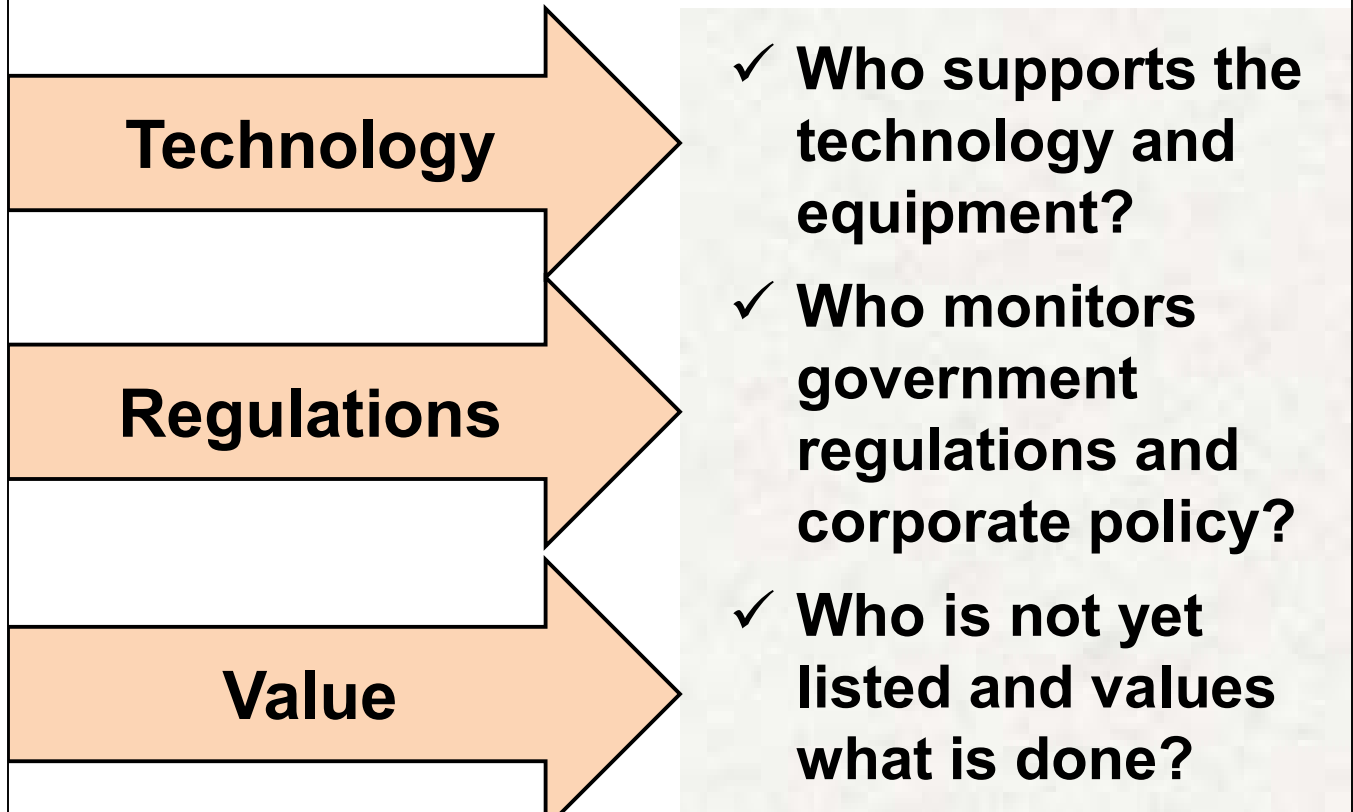


Who are the customers of the value stream?

Not just the customer of the final output.

What about the outputs which occur in the middle activities?

8. Other Stakeholders



Who are the other stakeholders?

Who supports the technology and equipment?

Who monitors government regulations and corporate policy?

Who is not yet listed and values what is done?

9. Speculate Value



For the current state, you often do not know exactly what your customers want.

Therefore, you are only speculating.

List what it is you think each customer wants.

Later, for the future state, you will not speculate.

10. Champion Approval



Get approval from your champion.

Everyone needs to be on the same page.

Steps 1 to 10



**Value
Stream
Definition
Form**

“Spirit”

- **Get everyone on 1 page**
- **15 minutes that saves hours**
- **First one is the hardest one you will ever do!**

That completes the SIPOC value stream definition.

The spirit is to get everyone on the same page.

These first 10 steps will, eventually, take about 15 minutes – and save you hours later in the process.

Of course, the first one will be the hardest. You will get better.



As mentioned earlier, the goal is to get everyone on the same page.

Time to Map!



Steps 11 to 20

Now, it's time to make that value stream map.

Just 10 more steps.

11. Choose Approach



A current state map can be created a number of ways.

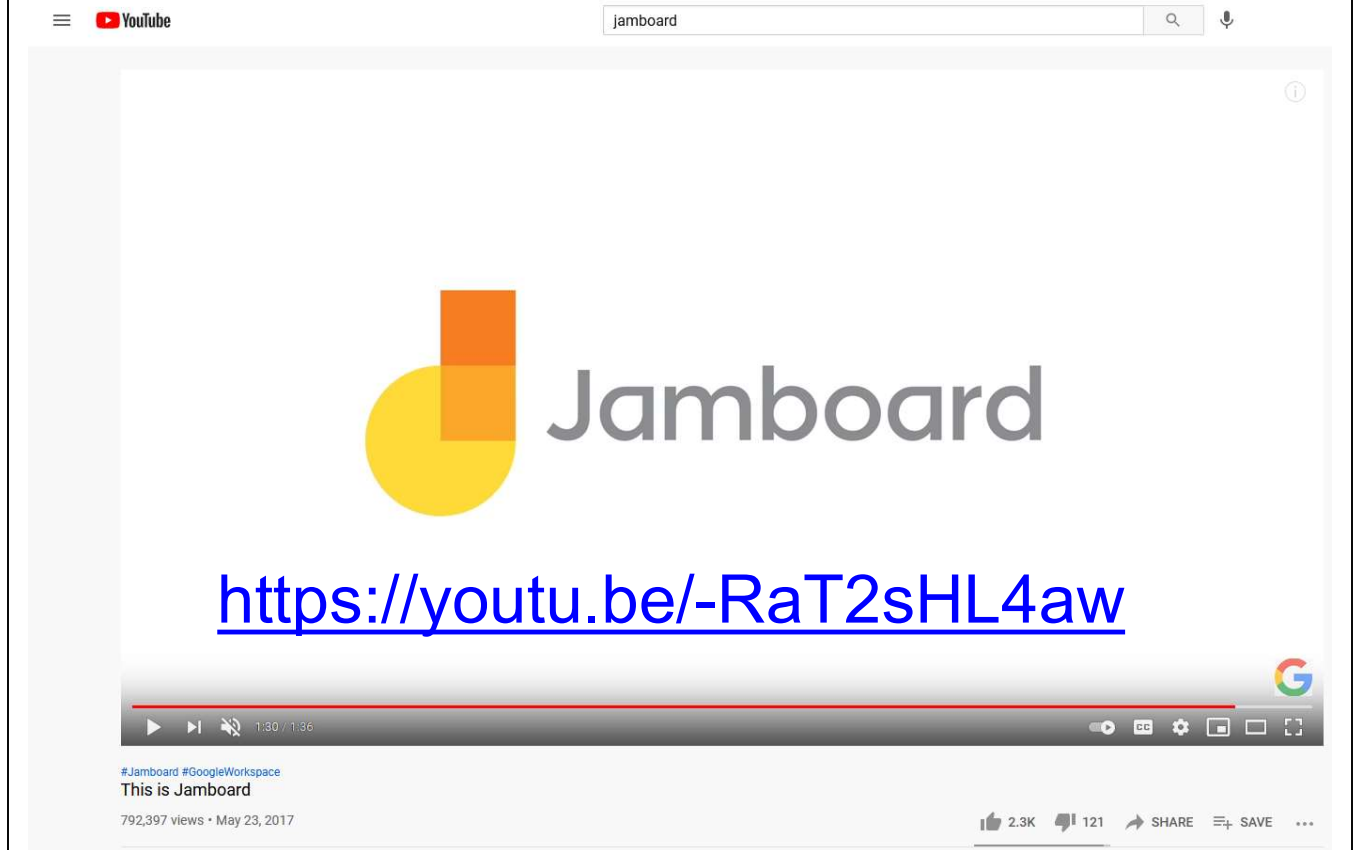
- White board
- Flip chart
- Physically walking the stream
- Butcher paper
- Software
- Post-it notes

Some mappers have created a disaster and written on a wall with a dark marker – don't follow in their footsteps!

For teams who gather together, the most popular and effective approach is a combination of post-it notes and a white board.

For virtual teams, use a collaboration tool.

11a. One Online Collaboration Tool



For teams scattered in different locations, one online collaboration tool is called Jamboard.

12a. Choose Your Symbols

Value stream mapping

Process	Customer / Supplier	Inventory	External Shipment	Push	Shipment Arrow
Go See Production	Electronic Information	Production Control	Data Table	Timeline segment	Timeline total
Supermarket	Safety Stock	Signal Kanban	Withdrawal Kanban	Withdrawal Batch	Production Kanban
Batch Kanban	Kanban Post	FIFO Lane	Kaizen Burst	Pull Arrow 1	Pull Arrow 2
Pull Arrow 3	Physical Pull	Sequenced Pull Ball	Load Leveling		

An internal step in the process	Data box for internal process steps	Supplier, outsourced operation, or customer	Material stores or staging location
Shipment (with frequency noted)		Inventory level	
Movement of goods between facilities	Push movement between internal steps	Pull movement between internal steps	
Manual information flow		Electronic information flow	
Weekly forecast	General location of operator	Kanban location	

There are lots of symbols.

As with most things, the fewer, the better.

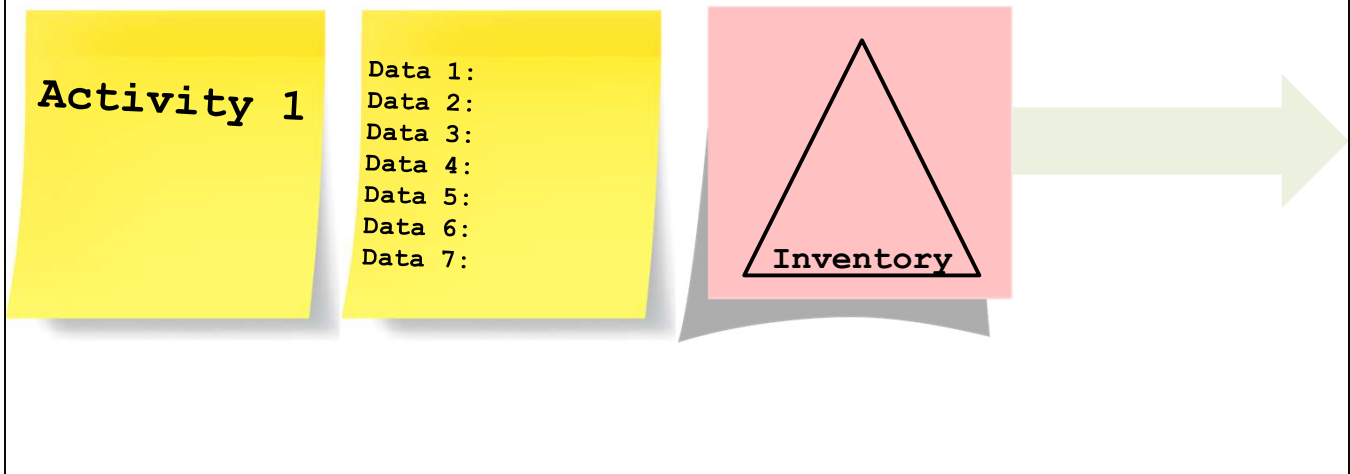
12b. Common Symbols

Activity Box

Data Box

Inventory

Connector



Here are the four symbols which should get you through 95% of current state mapping

13. Identify Big Activities



List the big activities.

Some value streams have a very controlled sequence of activities. You can walk the value stream from start to stop and determine each step.

However, many others have a sequence which is somewhat fuzzy or varies.

It can work well to first brainstorm and collect a long list of things which get done. Then come back to identify the sequence they occur in.

14a. Decide What Information

- | | |
|--|--|
| <ul style="list-style-type: none">✓ Cycle times✓ Changeover times✓ Inventory✓ Batch sizes✓ Number of operators✓ Container sizes✓ Skills required | <ul style="list-style-type: none">✓ Available time✓ Scrap rates✓ Equipment availability✓ Method of delivery✓ Tools✓ Distance✓ Shared resources |
|--|--|

You need to decide what information you will go after

You need to decide what information you will go after.

Get it right at the beginning or you will end up going back for it later.

Alternatively, there is a huge world of data and you don't have time to get everything.

This is an area where people will often cut corners and fail to prepare. They skip this step and then waste time reworking their current state map because it is not good enough.

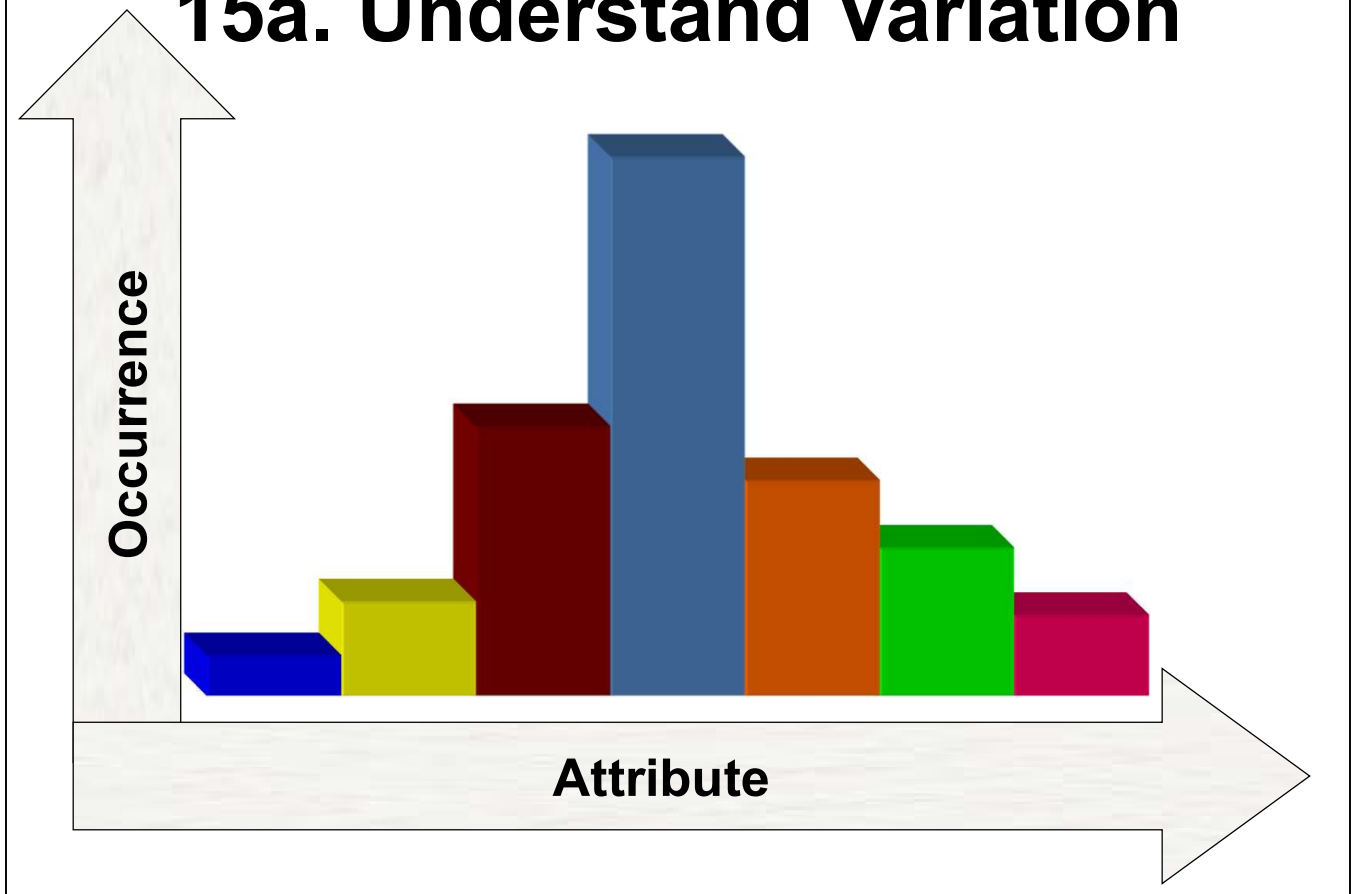
14b. Decide What Information

- | | |
|--|---|
| <ul style="list-style-type: none">✓ Number of shifts✓ Hours of operation✓ Number of products✓ Cross training✓ Operator availability✓ Approvals required✓ Defects | <ul style="list-style-type: none">✓ Inbound reports✓ Outbound reports✓ Software✓ Hazardous materials✓ Ergonomics✓ Variation✓ Priorities |
|--|---|

Get it right at the beginning or you will end up going back for it later

Here are other types of data you might want to collect.

15a. Understand Variation



Prepare yourself to get the variation which exists for almost all data you will seek.

Don't just say the batch size is 3,000, if it varies from 1,000 to 5,000 with an average of 3,000.

Don't say the schedule arrives on Monday morning, if it occasionally comes on Fridays and Tuesdays.

15b. Understand Priorities

How does work get prioritized?

Actual practice is often different than policy or what people say.
Get to what really happens and not what is supposed to happen.

Also prepare yourself to dig into how work is currently prioritized.

This can be tricky, as actual practice is different than policy, or what people say.

Get to what really happens and not what is supposed to happen.

Have you been waiting for service and found the priorities are somewhat random? Think of opening another lane in grocery store. The people who came last get moved to the front of the new line.

What's the priority in the emergency room at a hospital?

16. Collect Information

- ✓ **Observe**
- ✓ **Interview**
- ✓ **Analyze**
- ✓ **Discuss**
- ✓ **Procedures**
- ✓ **Presentations**

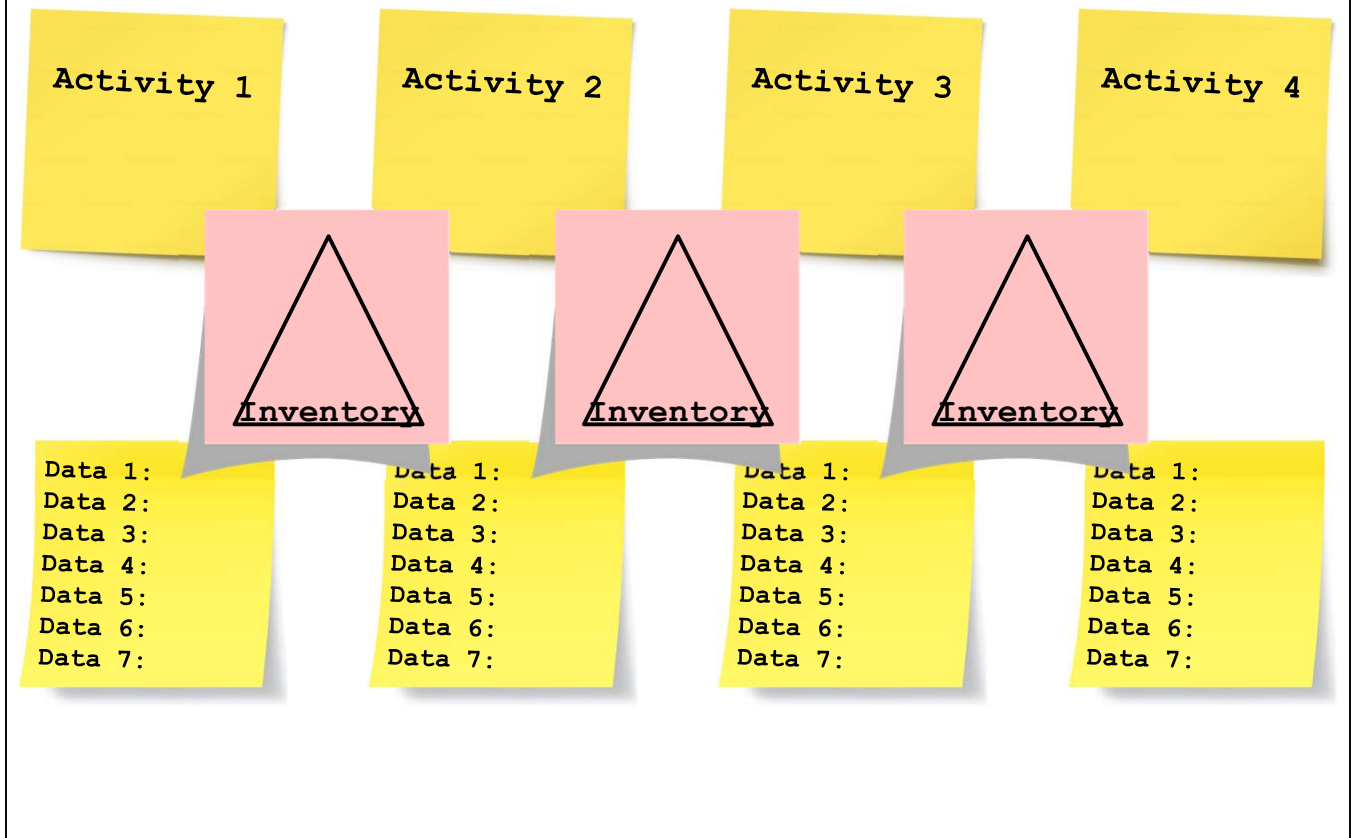


Be aware of using people's memory vs. getting the facts!

One owner claimed they never had problems loading trucks for customer delivery. The lean practitioner pushed for real data and found 2 customer complaints had come in that week because their order had not been loaded on the delivery truck. These customers were told to wait until next week.

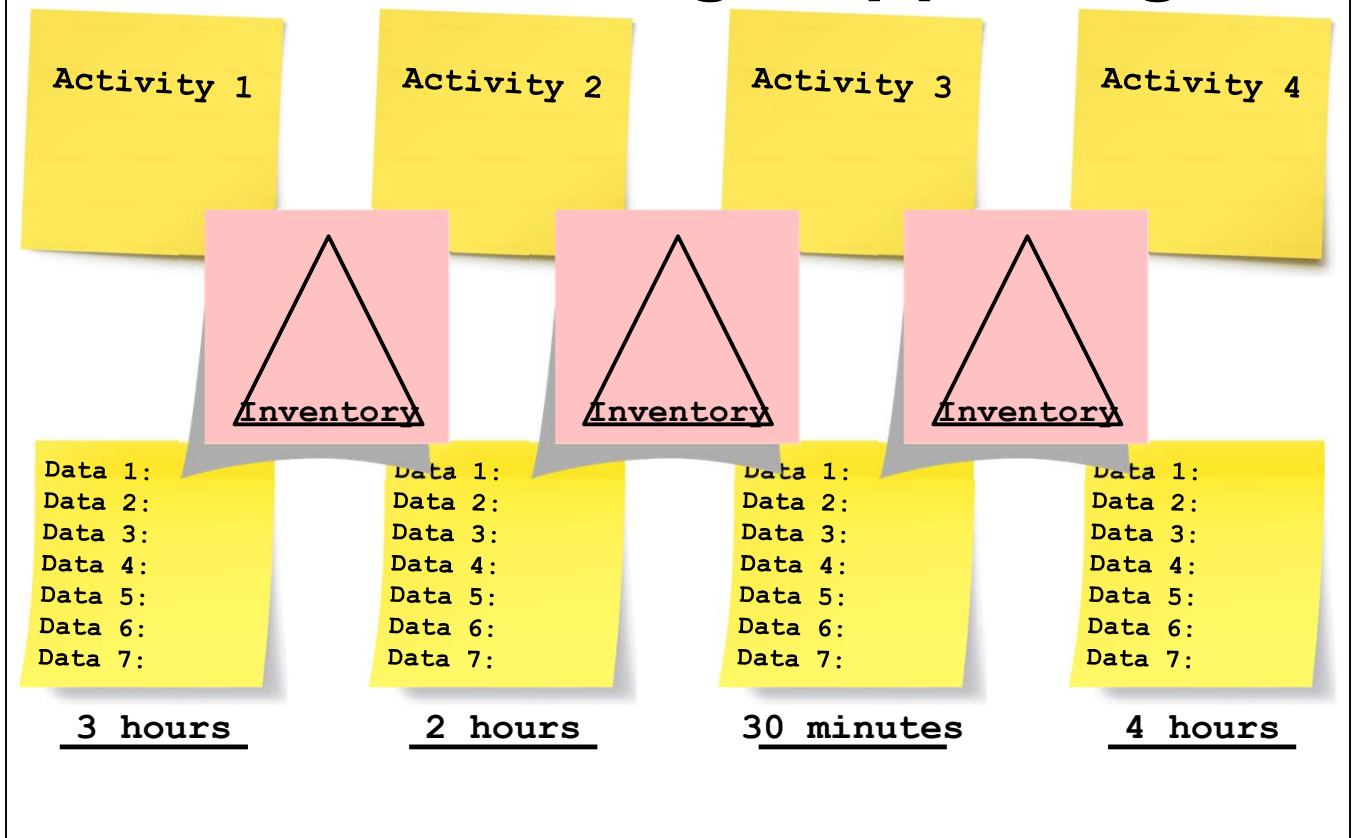
Be cautious of cultural differences. Some cultures are prone to tell you what you want to hear. Confrontation or poor performance are not talked about easily. For some, nodding their head up and down means they hear you. It does not mean they agree with you.

17. Add Your Data



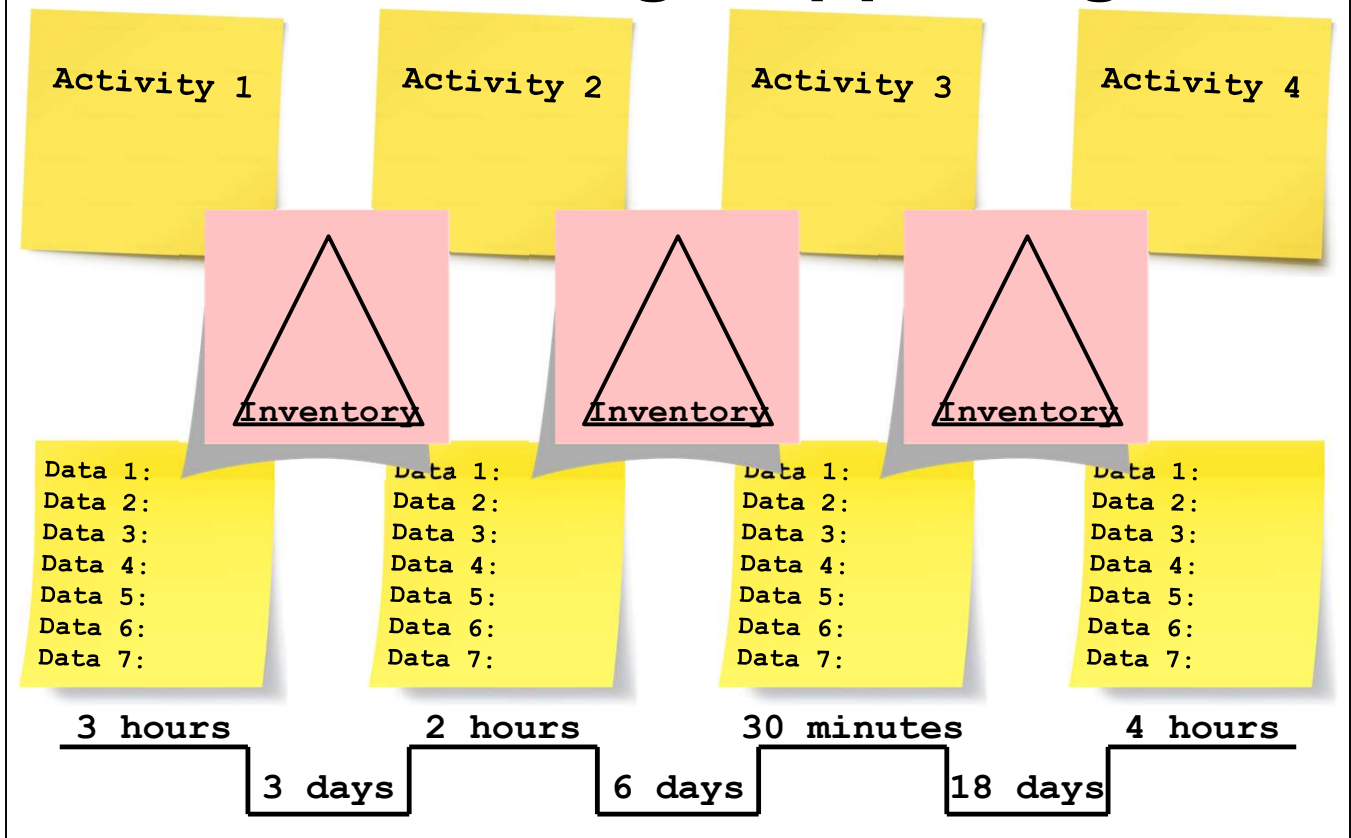
Now that you have the data, add it to your map.

18. Something Happening



Label the time for each activity – the time when something is happening

19. Nothing Happening



Label the time between the activities – the time nothing is happening

20. Value Add Guestimate

Something Happening

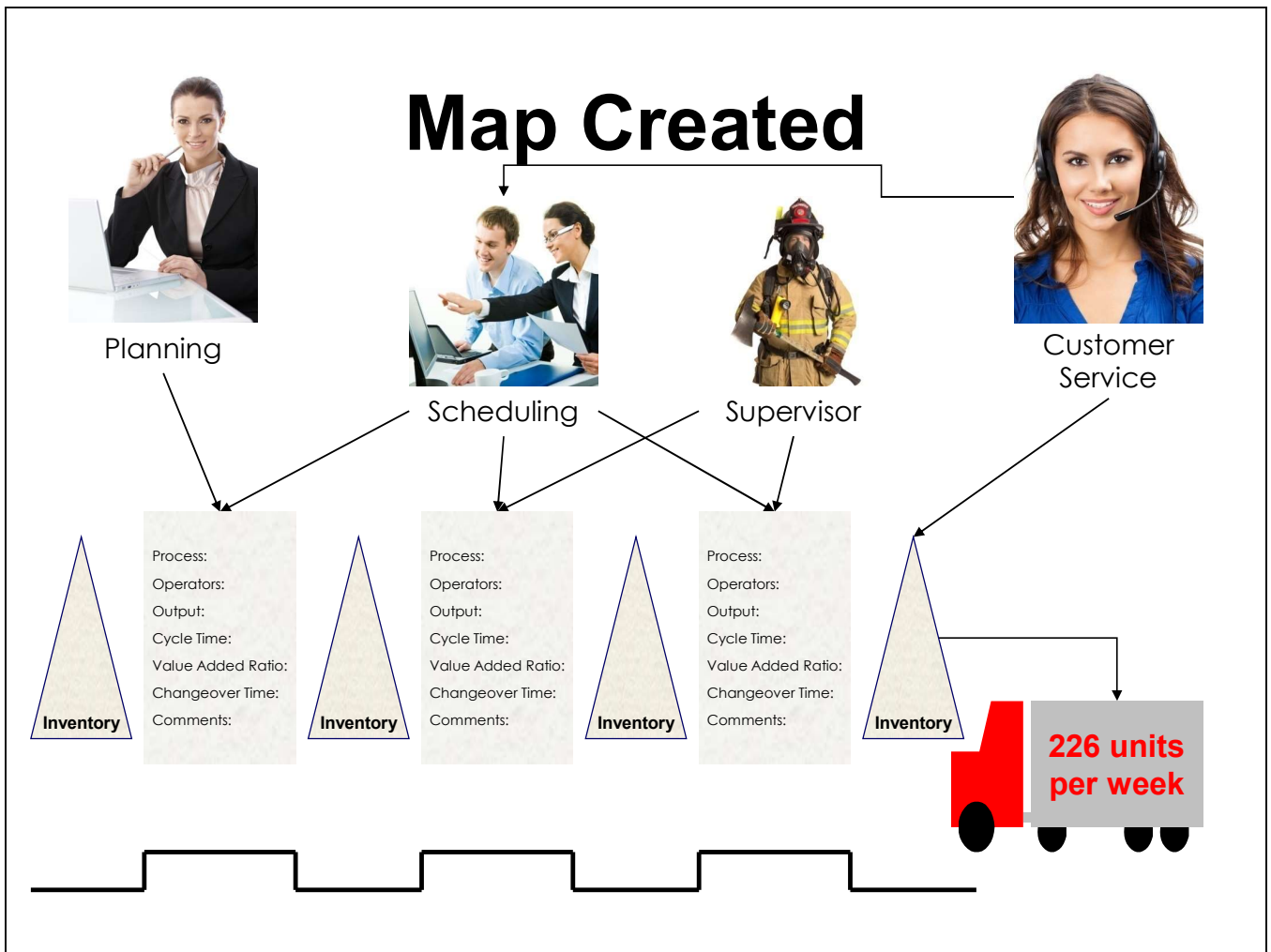
Total Time

Make a guestimate of value add.

Take the total time something is happening and divide it by the total time.

One company found something happening to be 18 minutes over a 6 week total time.

This is just a guestimate of value add – because much of the time something is happening is not necessarily something of value happening.

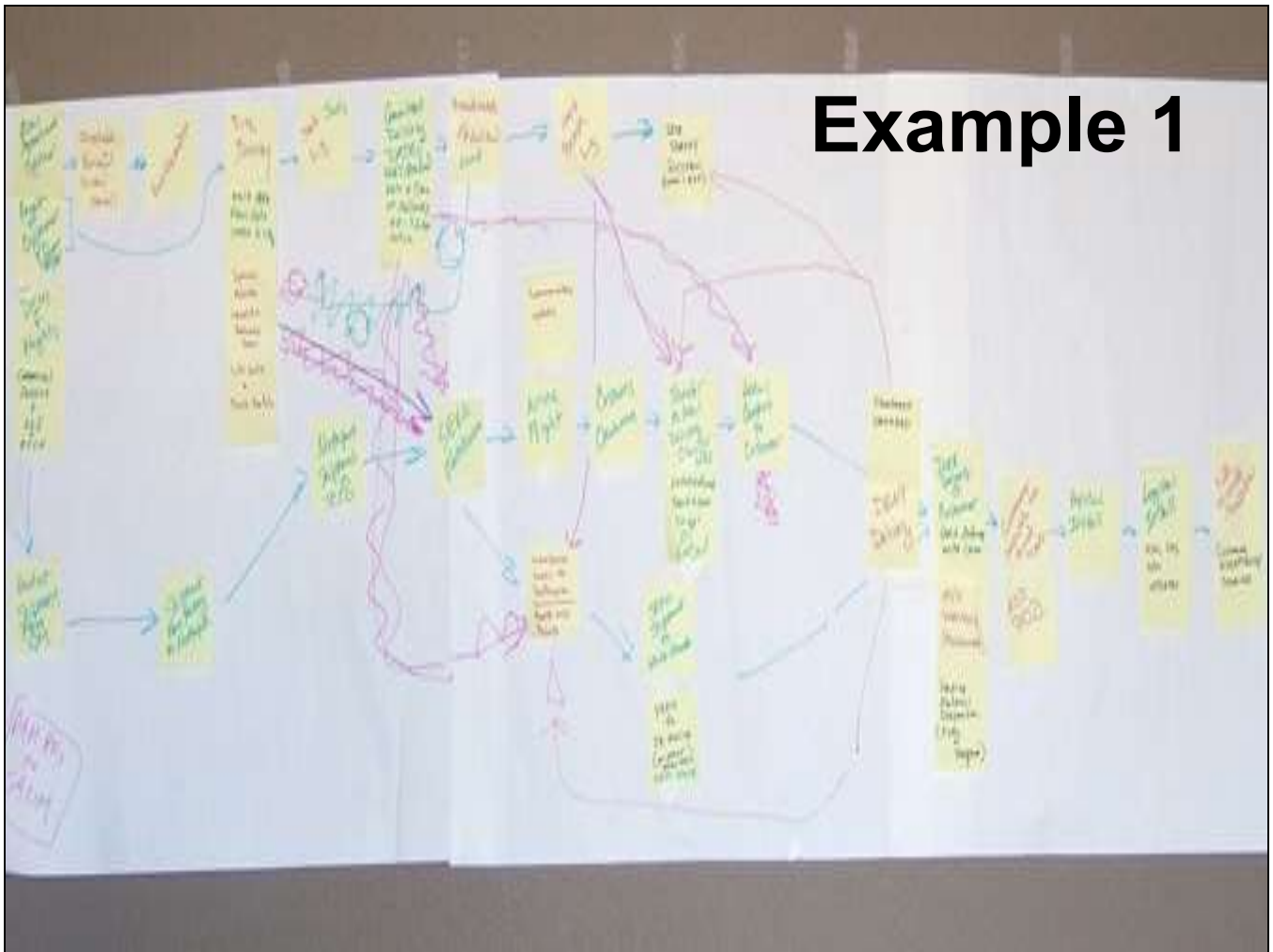


At this point, your current state map has been created.

Most likely, your current state map will not look this nice!

Let's look at a few examples.

Example 1

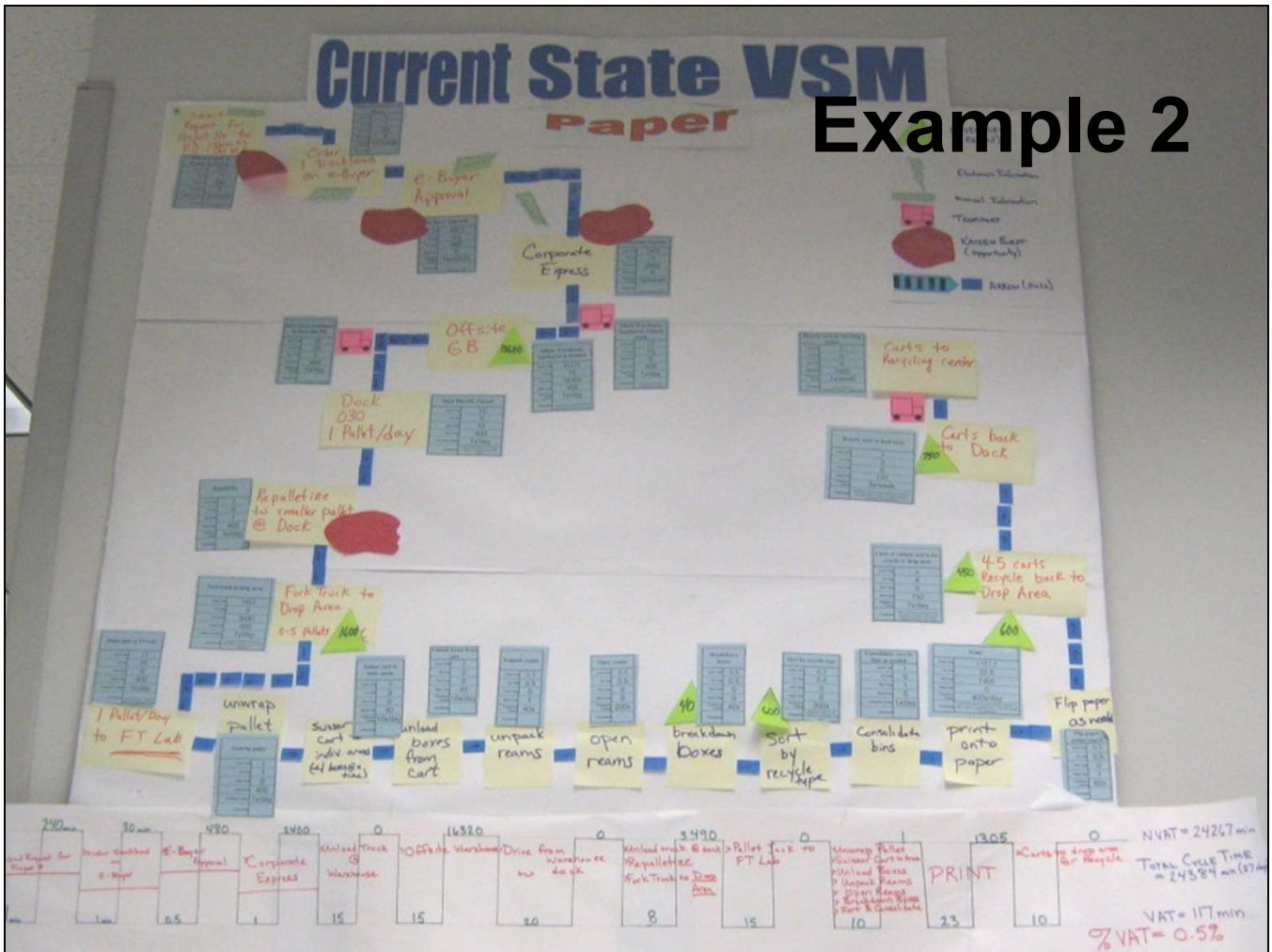


Here is an example using post-it notes.

The steps seem to have been defined, but the sequence appears to be open to debate.

Very common – sometimes we do it in this sequence and sometimes in a different sequence

Or sometimes we do one step, but if it is the end of the quarter, then we skip it.

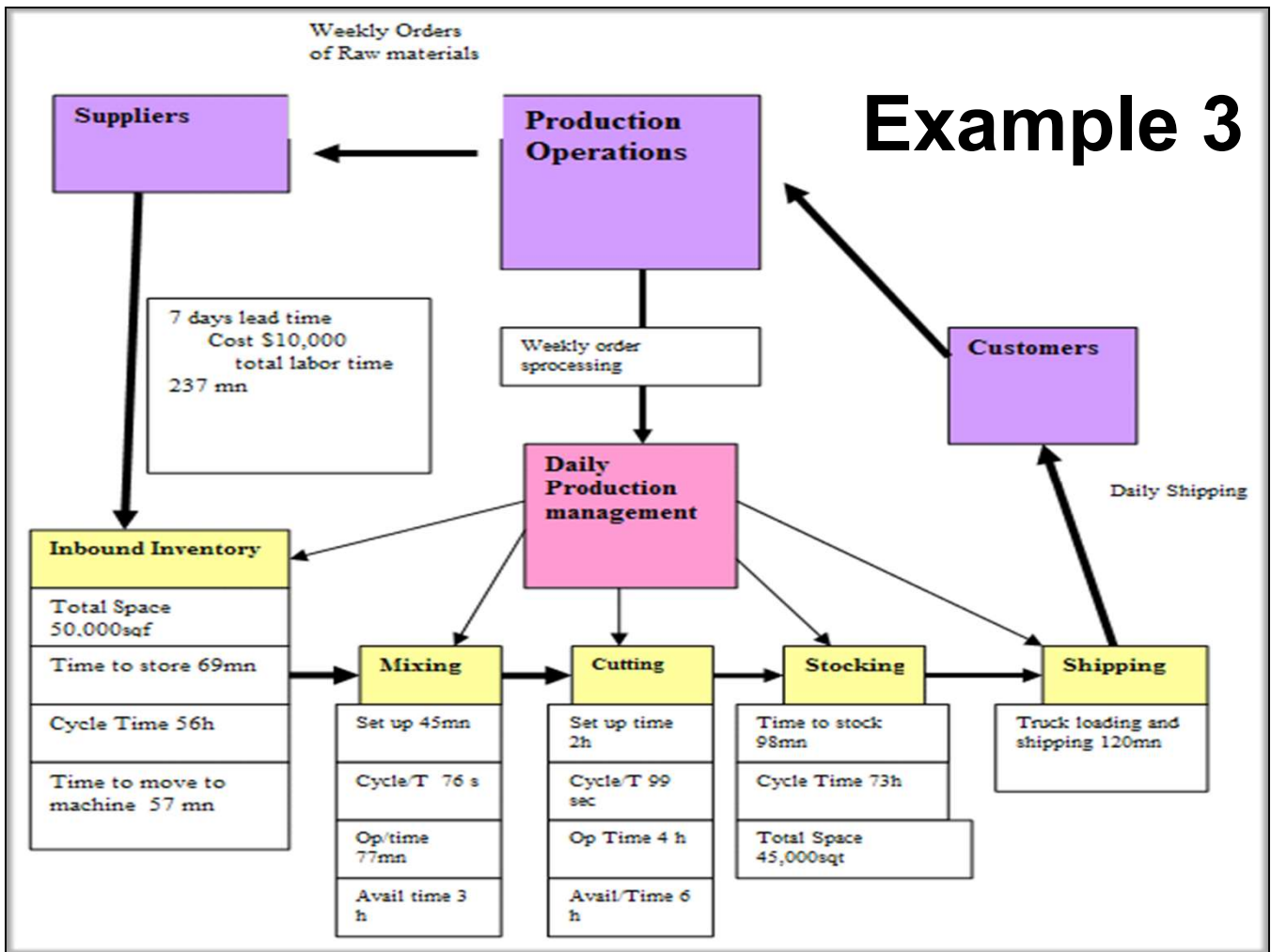


Here is another example.

This one looks good. You can see how each step has a list of data collected.

The time line at the bottom shows when something is happening (bottom) and when nothing is happening (top).

The guesstimate of value add time is in the lower right hand corner – 0.5%



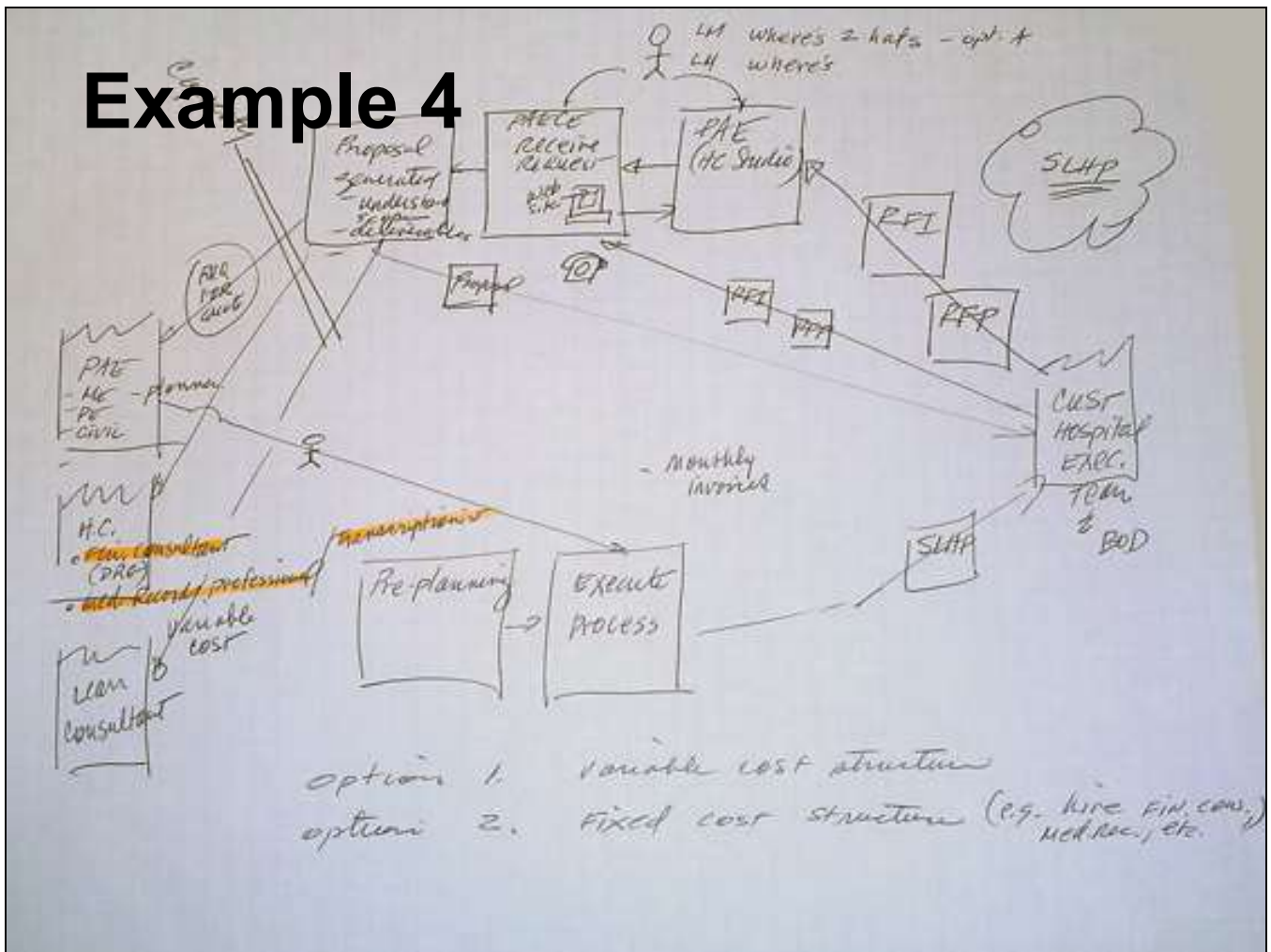
Here is another version which was put into a PowerPoint slide.

It's OK to put into PowerPoint for a presentation, after you create a version with post-it-notes.

Creating straight into a software tool tends to slow down the team and causes some people to lose interest as people argue over font size and color.

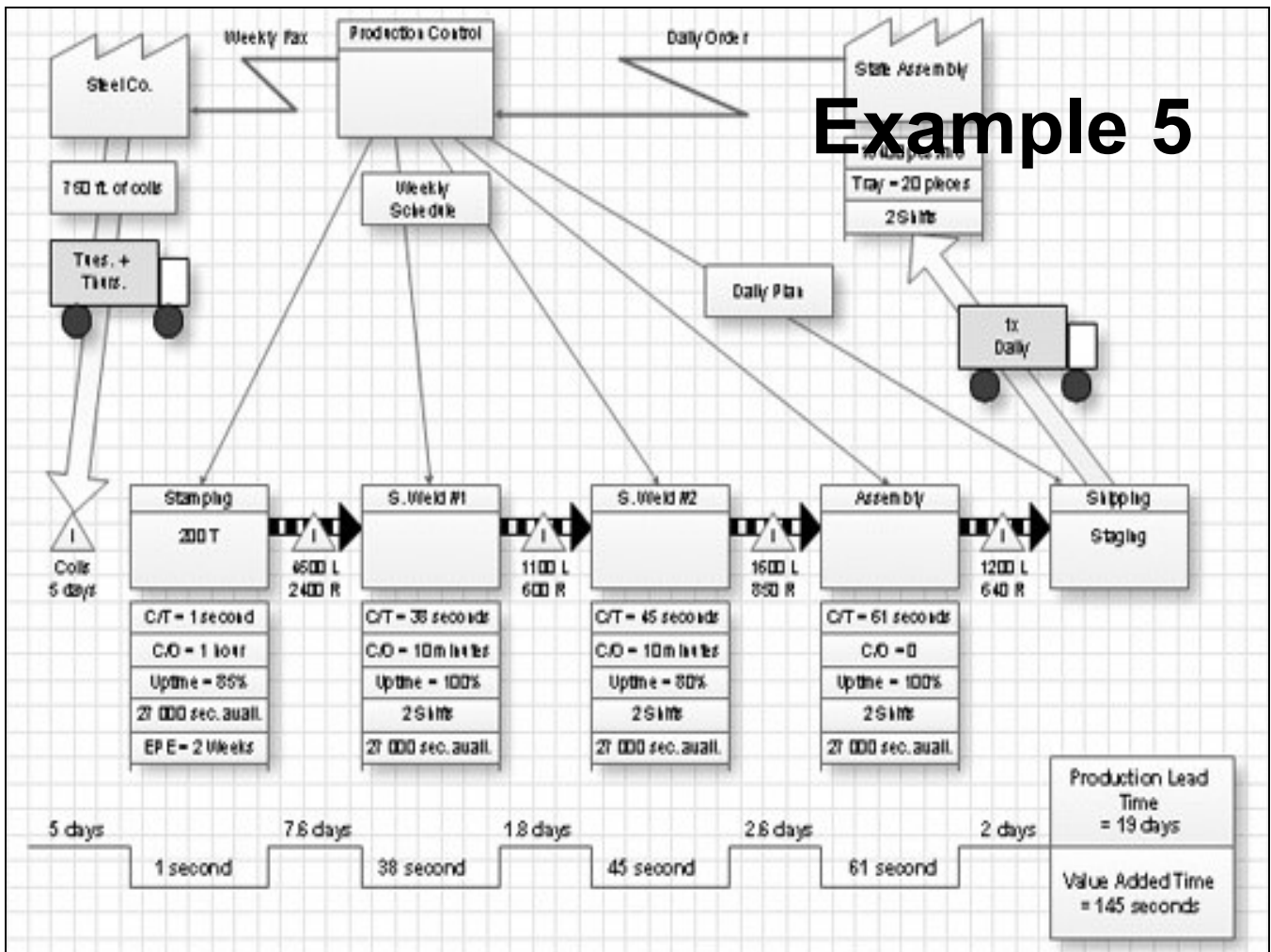
But, even for a presentation – taking a picture, like we saw in the earlier examples, is still the best.

Example 4



Here is an example which looks pretty weak.

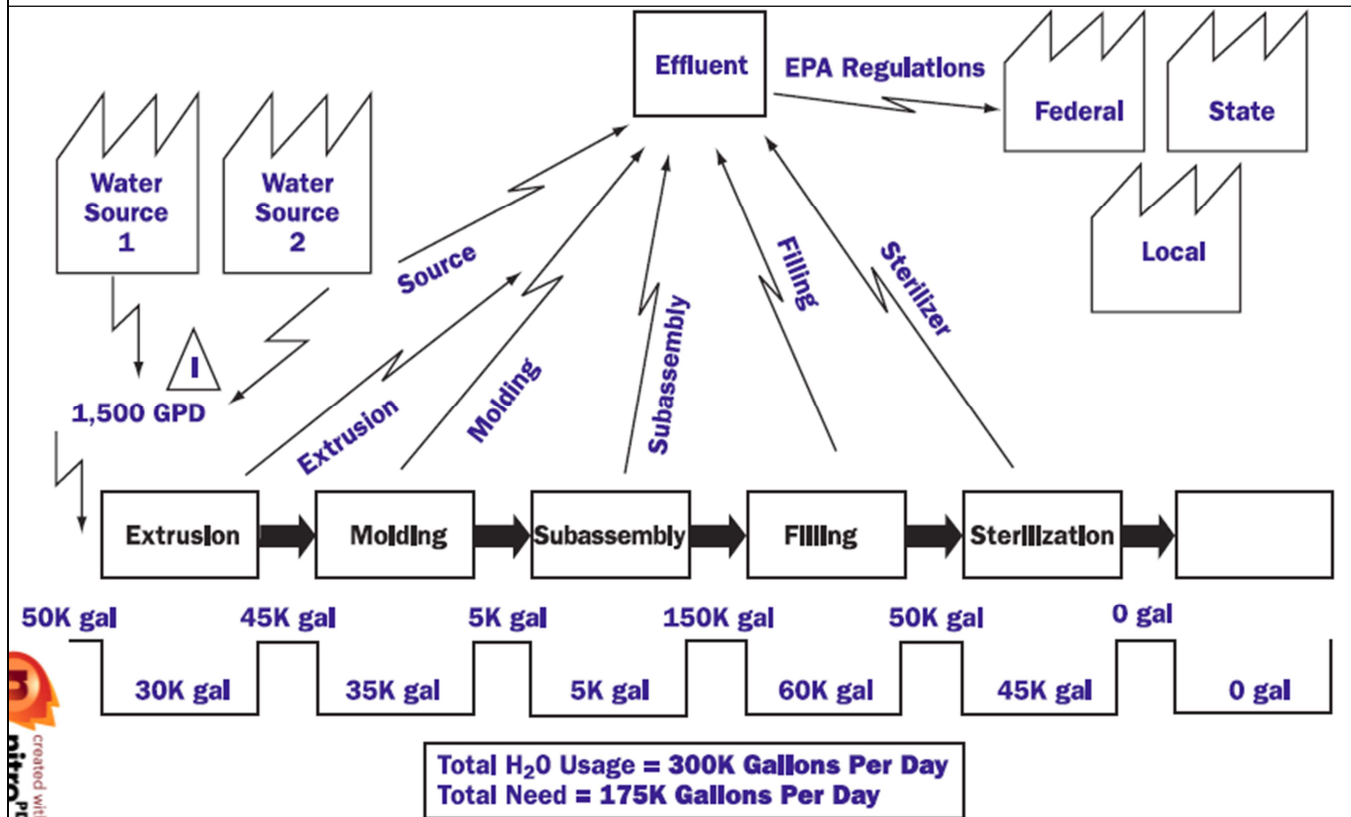
Be sure you get some data on your map.



Here is one more which used mapping software.

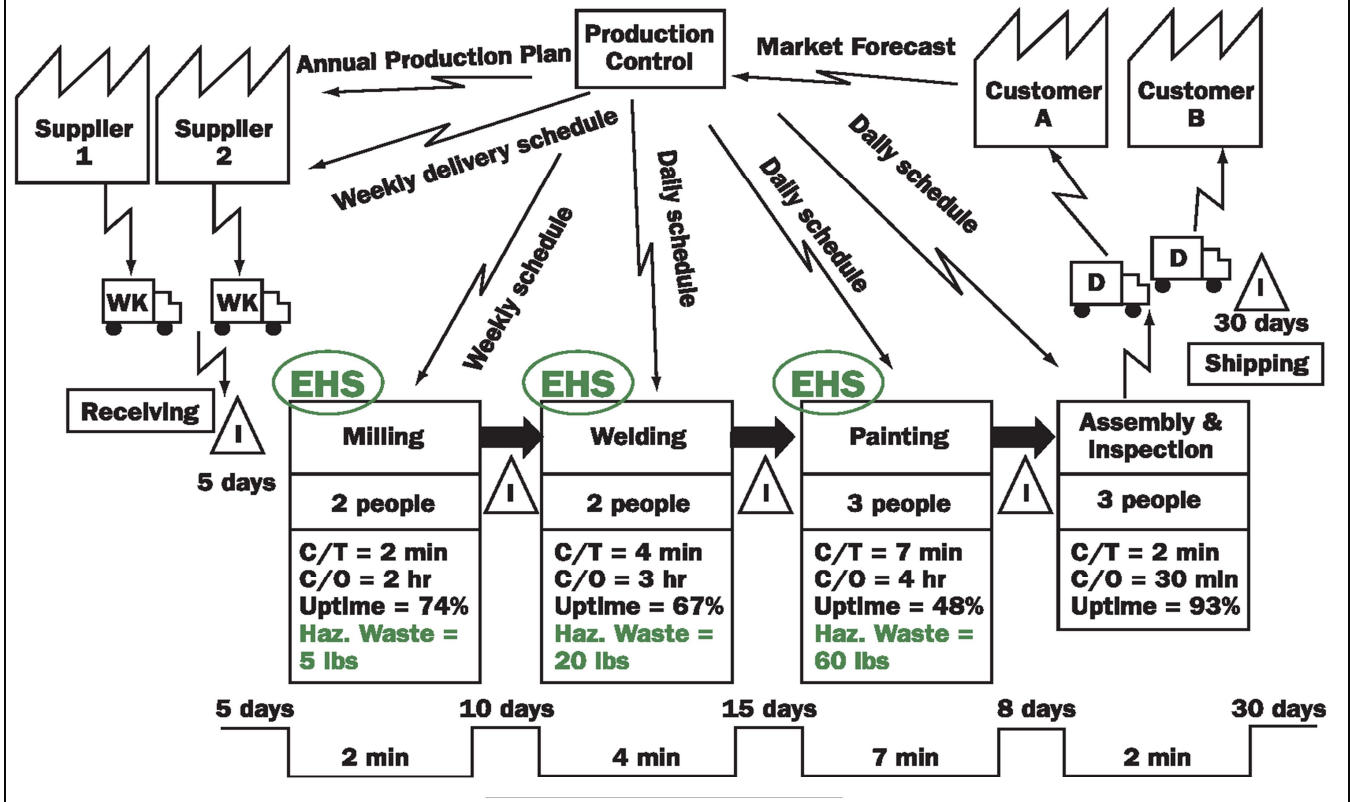
The lower right corner has the total lead time of 19 days and value add time of 145 seconds.

Example 6: Natural Resources



Here is an example where the focus was on usage and waste of natural resources.

Example 7: Environmental Waste



Here is an example where the goal was to identify hazardous materials and environmental waste.

Final Thought

You will become a detective!

- What level of detail is OK?
- What data is important?
- How accurate must data be?
- Are you getting straight answers?
- Do you have what you need?



A final thought.

It will take experience and time. A great mapper will become a detective and simply know what action to take.

What level of detail is OK; is the team getting to waste or simply wasting time?

What data is important?

How accurate must it be?

Are you getting straight answers; are people hiding things they are embarrassed to admit?

Do you have everything you need; is more information required?

In the end, a great current state map will show lots of waste and lots of opportunity. An organization which embraces lean thinking will often laugh at the foolish things they have found!

Summary

That wraps up the 20 steps and a look at a few examples.

SIPOC: Steps 1 to 10

1. Identify mapping team
2. Identify value stream
3. Identify suppliers
4. Identify inputs
5. Identify process
6. Identify outputs
7. Identify customers
8. Other stakeholders
9. Speculate value
10. Champion approval

**SIPOC
value
stream
definition**

Steps 1 to 10 are designed to quickly get everyone on the same page.

Map: Steps 11 to 20

11. Choose approach
12. Choose your symbols
13. Identify big activities
14. Decide what information
15. Variation and priorities
16. Collect information
17. Add your data
18. Something happening
19. Nothing happening
20. Value add gustomer

**Creating
the map**

Steps 11 to 20 are designed for creating the map.



End of Current State Mapping