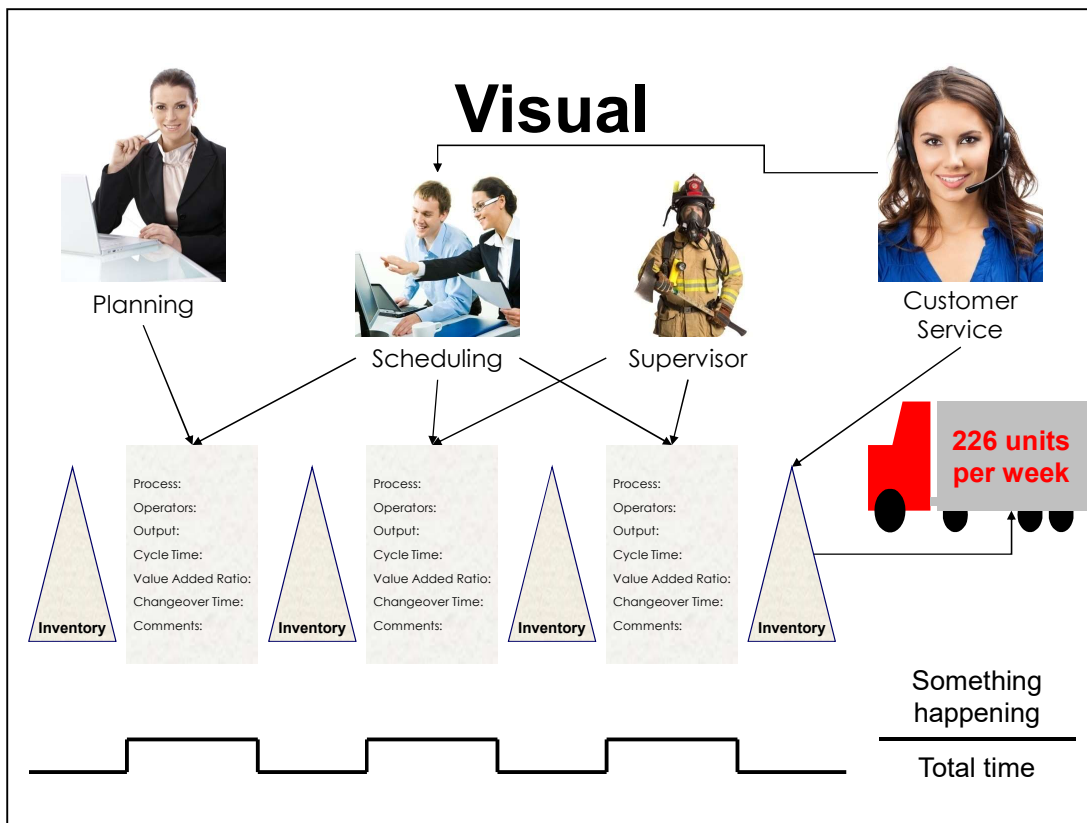# Future State Mapping

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

# Value Stream Map

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

A value stream map is a visual representation of activities and flows of information, materials, and services required to accomplish specific objectives.

The map is visual.

It contains:
- 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.

A future state will have much less non-value add than the current state.

You rarely have unlimited time and funds to eliminate all waste – there will still be non-value add in your future state.

# Value Stream Flows

**Materials, Products, and Services** →

← **Funds and Returns**
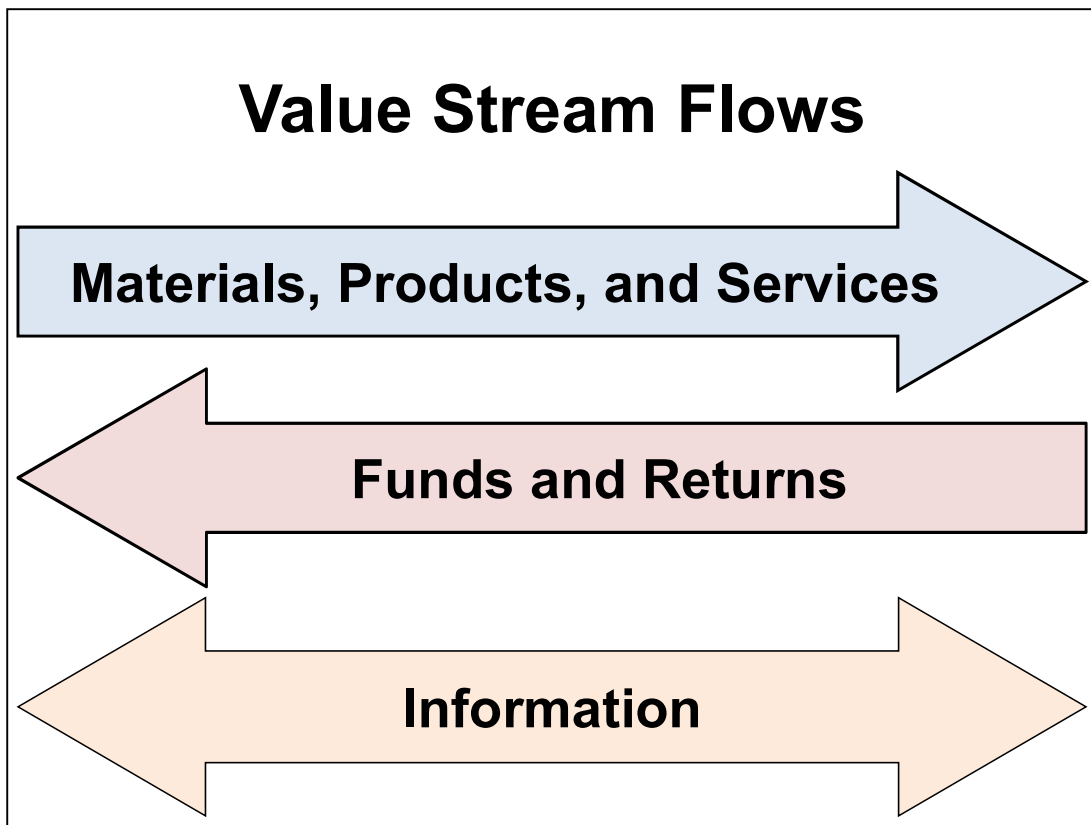
← **Information** →

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 future state value stream map must be…**

**…at the level of detail which supports the identification of what needs to change.**

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 that extend out the door and down the hallway. This approach is questionable – the scope of that type of project is probably too big.

In most cases, your future state map should be about the same level of detail as the current state map you created earlier in your project. The future state map should be at the level of detail which supports identification of what needs to change. You will be in trouble if your are comparing apples to oranges in terms of the level of detail for your current state map and your future state map.

# Don't Get Carried Away

"Any intelligent fool can make things bigger and more complex…

…It takes a touch of genius, and a lot of courage to move in the opposite direction."

- Albert Einstein

As you think about creating a future state, consider the wisdom of Albert Einstein.

"Any intelligent fool can make things bigger and more complex…

…It takes a touch of genius, and a lot of courage to move in the opposite direction."

You should be looking to completely eliminate unnecessary steps, reports, and complicated procedures.

A lean project team is not looking for massive galactic optimization through a multi-million dollar software tool.

One company looked at the flow of work and workers and found that cutting a hole in the wall reduced walking time and folk-lift travel – the change was astonishing.
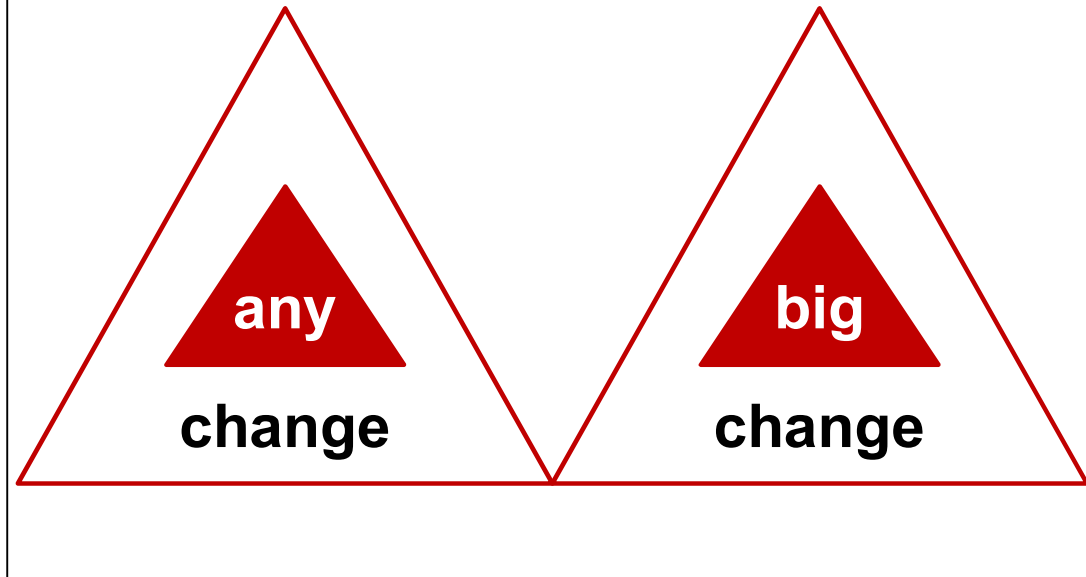
# 21 Steps to Success



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

There are 21 steps.

# Compared to Current State



As each step is described, it is marked with an "any change" or "big change" symbol.

Any change identifies steps which are very similar to what you already did for the current state map. You should only need to note if there are any changes from the current state mapping session. These steps should be very fast.

Big change identifies steps which are significantly different from the directions for current state mapping. You will have more time and effort required for these steps.

# Steps 1 to 10

**Value Stream Definition**

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

This should be a 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.

**On One Page** — Team, Name, Suppliers, Inputs, Process, Outputs, Customers, Stakeholders, Value, Approval

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.

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.

For future state mapping – you only need to identify if there need to be any changes from when you created the current state map. If not, then repeat your list from the current state mapping session.

# 2. Identify Value Stream

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

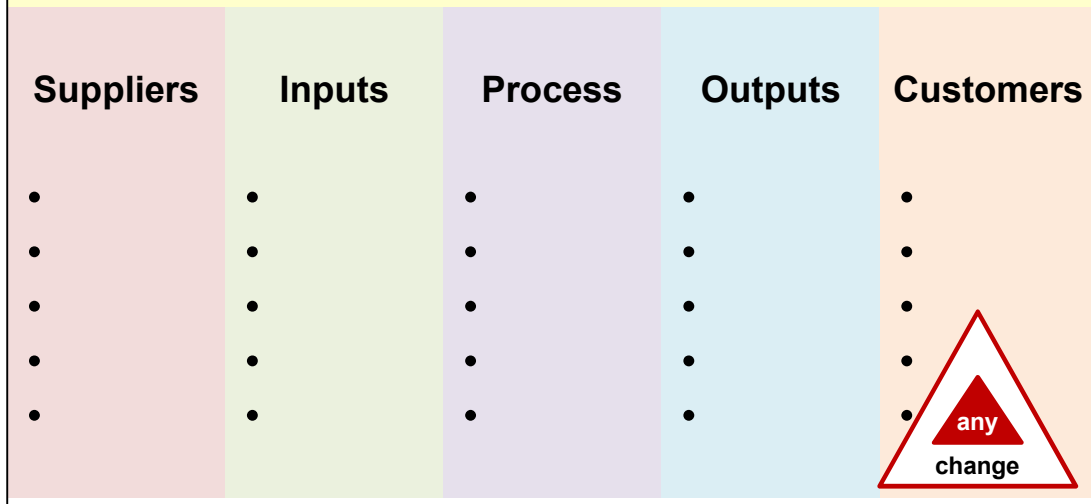Identify the value stream you are mapping.

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

What name do you call it?

For future state mapping – you only need to identify if there need to be any changes from when you created the current state map. If not, then repeat what you did for the current state mapping session.

# 3 to 7. Create SIPOC

## SIPOC Definition

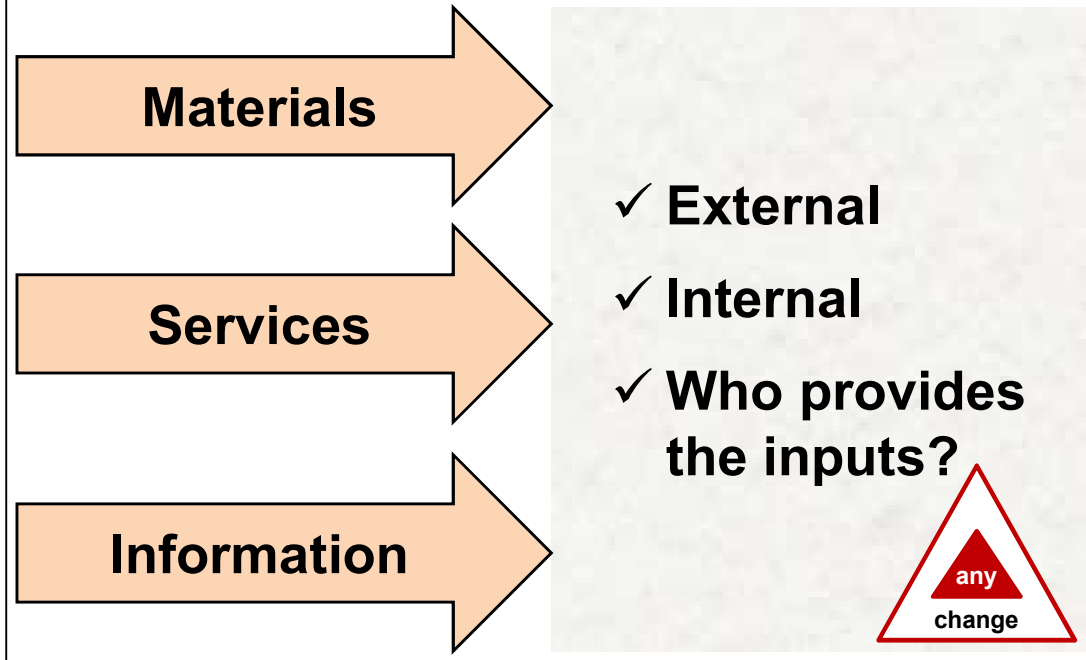| Suppliers | Inputs | Process | Outputs | Customers |
|-----------|--------|---------|---------|-----------|
| • | • | • | • | • |
| • | • | • | • | • |
| • | • | • | • | • |
| • | • | • | • | • |
| • | • | • | • | • **any change** |

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.

For future state mapping – you only need to identify if there need to be any changes from when you created the current state map. If not, then repeat what you did for the current state mapping session.

Let's look closer at each step.

# 3. Identify Suppliers

**Materials** →

**Services** →

**Information** →

- ✓ **External**
- ✓ **Internal**
- ✓ **Who provides the inputs?**

**any change**

For suppliers, you can list all the suppliers of materials or information.
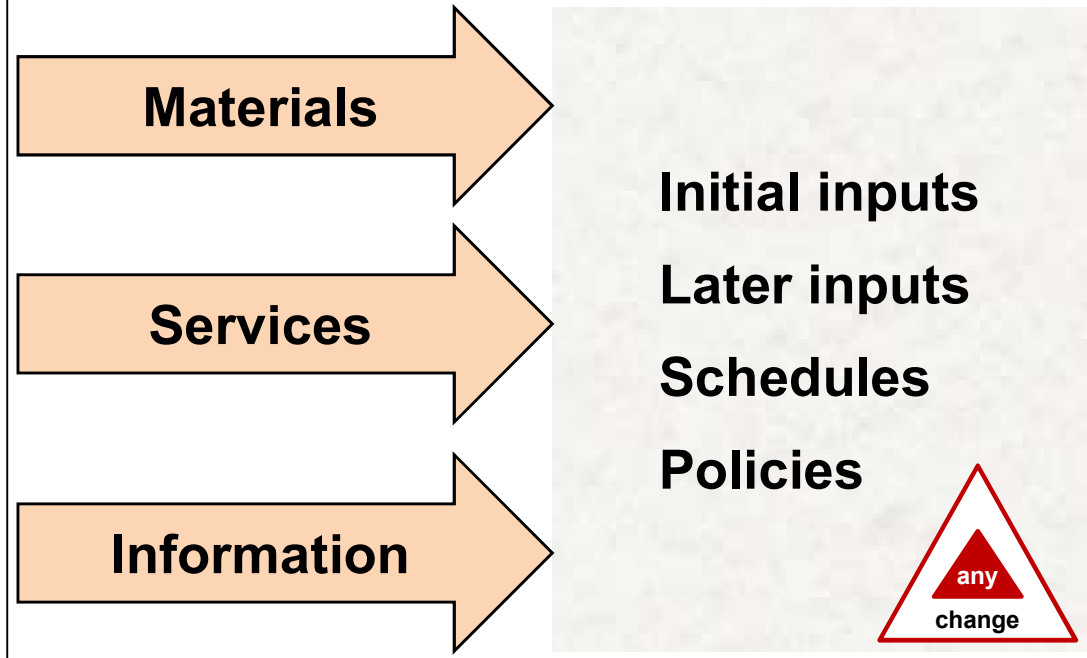
These suppliers can be external companies, internal departments, or some other source.

Not just the supplier of the initial input.

What about the inputs that occur during the middle activities?

For future state mapping – you only need to identify if there need to be any changes from when you created the current state map. If not, then repeat what you did for the current state mapping session.

# 4. Identify Inputs

**Materials** →

**Services** →

**Information** →

**Initial inputs**

**Later inputs**

**Schedules**

**Policies**

any change

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?

For future state mapping – you only need to identify if there need to be any changes from when you created the current state map. If not, then repeat what you did for the current state mapping session.

# 5. Identify Process

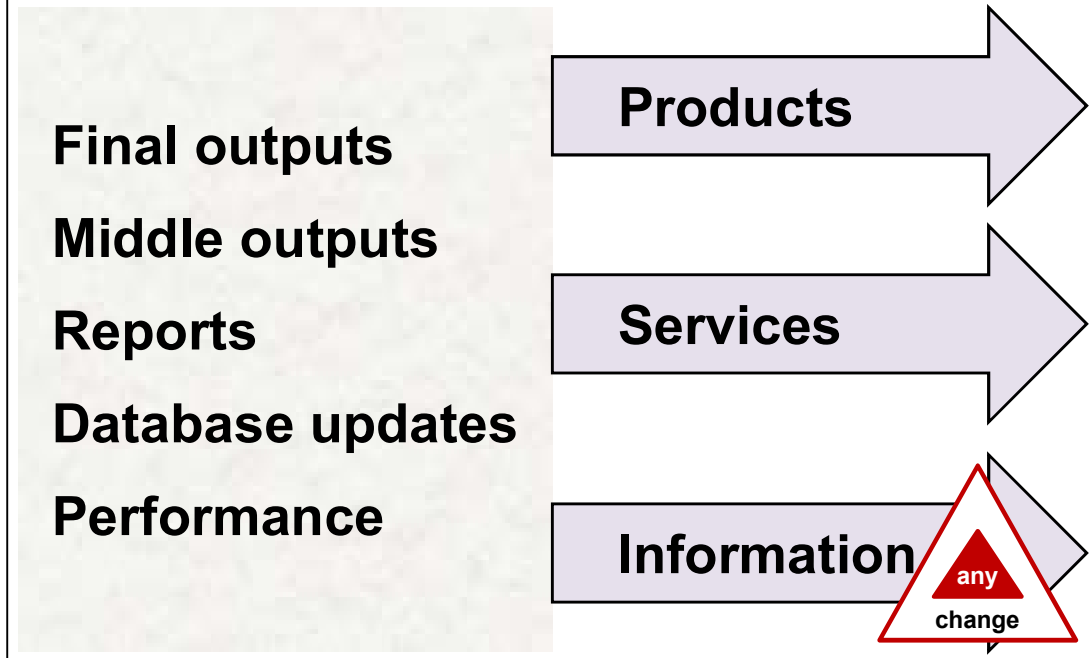| Steps | People |
|-------|--------|
| ✓ **First step** <br><br> ✓ **Middle steps** <br><br> ✓ **Last step** | ✓ **Managers** <br><br> ✓ **Workers** <br><br> ✓ **Support** <br> any change |

Step 5 is to identify the process.

List the steps and the people.

For future state mapping – you only need to identify if there need to be any changes from when you created the current state map. If not, then repeat what you did for the current state mapping session.

For most, there will a few changed steps. For others, the steps will be same, but the details will be much different. Those details come later.

# 6. Identify Outputs

**Final outputs**

**Middle outputs**

**Reports**

**Database updates**

**Performance**

Products

Services

Information

any change

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?

And, any performance measurements?

For future state mapping – you only need to identify if there need to be any changes from when you created the current state map. If not, then repeat what you did for the current state mapping session.

# 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 that occur in the middle activities?

For future state mapping – you only need to identify if there need to be any changes from when you created the current state map. If not, then repeat what you did for the current state mapping session.

# 8. Other Stakeholders

Technology

Regulations

Value

any change
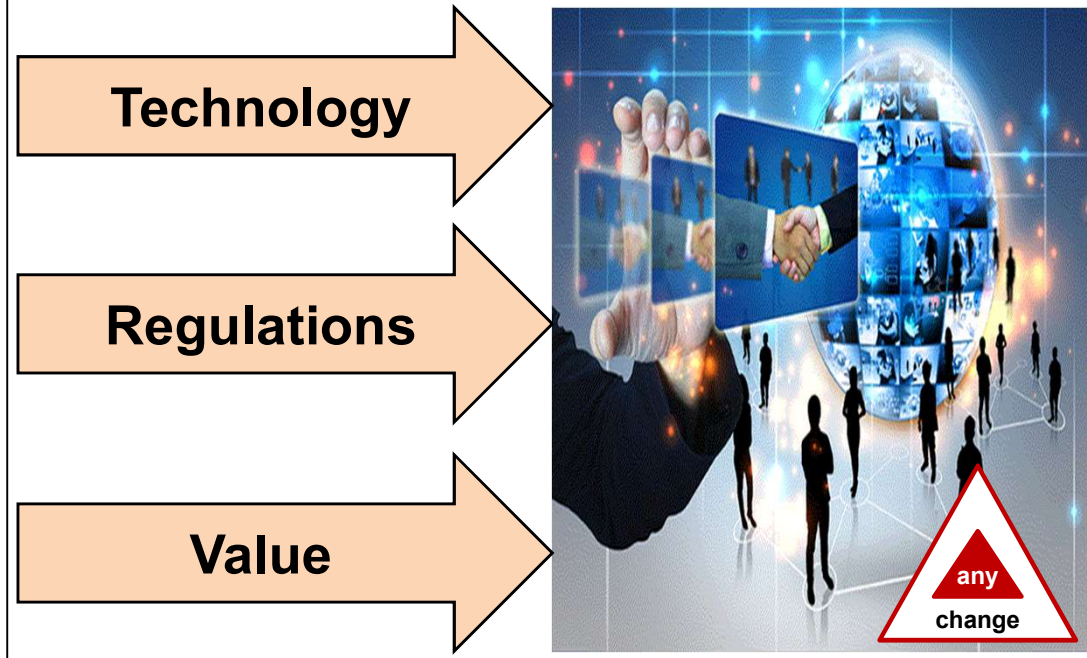
Who are the other stakeholders?

Who supports the technology and equipment?

Who monitors government regulations and corporate policy?

Who is not yet listed and values what is done?

For future state mapping – you only need to identify if there need to be any changes from when you created the current state map. If not, then repeat what you did for the current state mapping session.

# 9. Specify Value



For the current state, you often did not know exactly what your customers and other stakeholders want. Therefore, you where only speculating.

For the future state, you need your customers and other stakeholders to specify value.

The is a big change from current state mapping.

You should have specified value when you where assessing the opportunities for improvement.

If these value specifications have not been completed, then now is the time to pause and go get that information.

# 10. Champion Approval



Get approval from your champion.

Everyone needs to be on the same page.

The actual step of gaining approval is not much different than what you did for current state mapping.

But, your project champion should be much more focused on other aspects.
What are the changes you have made for steps 1 to 8?
And then, what have customers and other stakeholders specified as value?

# Steps 1 to 10

**Value Stream Definition**

**"Spirit"**

- **Get everyone on 1 page**
- **15 minutes that saves hours**
- **One big change from your current state**

That completes the 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.

The biggest change is between current state and future state mapping is having value specified by customers and other stakeholders.

**On One Page**

Team | Name

Suppliers | Inputs | Process | Outputs | Customers

Stakeholders | Value | Approval

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

# Time to Evaluate



## Steps 11 to 12

For the next two steps, you will evaluate and select the improvements you will want to incorporate into your future state.

Much, if not all, of this could have been part of assessing your opportunities – done after your current state map is complete and before you begin creating your future state map.

If so, then these next two steps are very fast.

If you have not evaluated and selected improvements, then these next two steps could take several weeks.

# 11. Evaluate Options

✓ **Benchmarking**

✓ **Best Practices**

✓ **Emerging Trends**

✓ **Stakeholders**

✓ **Creativity**

big
change
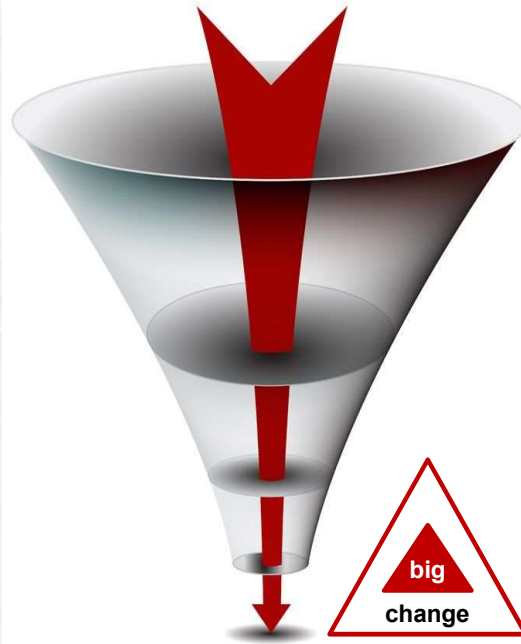
Step 11 is to evaluate improvement options.

You should explore benchmarking, best practices, emerging trends, talking with stakeholders, and exercising your own creativity.

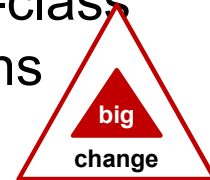This is a big difference from current state mapping.

What should the future state look like? You cannot just assume the people on your team know what needs to be done.

Let's look closer at each approach.

# Benchmarking

Comparing the performance of your products, services, or processes with those of competitors and best-in-class organizations

**big change**

Benchmarking involves comparing the performance of your products, services, or processes with other organizations.

You can benchmark competitors that are better than you.

You can, and should, benchmark organizations in other industries that have a similar process.

# Best Practices



**A procedure, demonstrated by research and experience, which produces superior results and is suitable for widespread adoption as a standard**
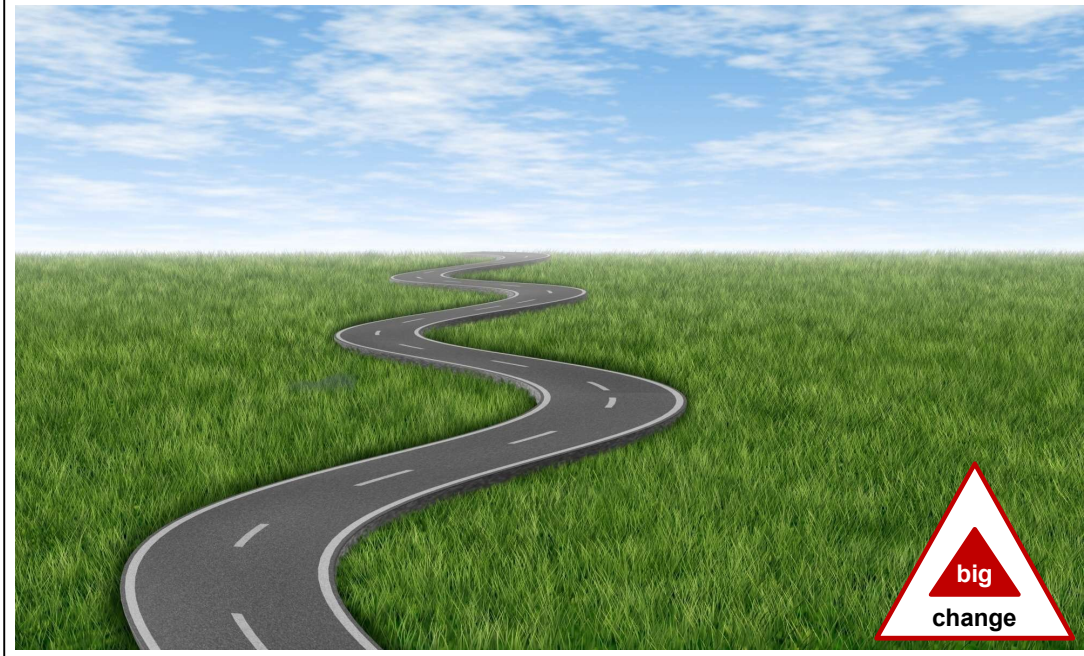
Best practices are a procedure, demonstrated by research and experience, which produces superior results and is suitable for widespread adoption as a standard

You should examine best practices which apply to the value stream you seek to improve.

There is no need to waste time re-creating what has already been accomplished and documented.
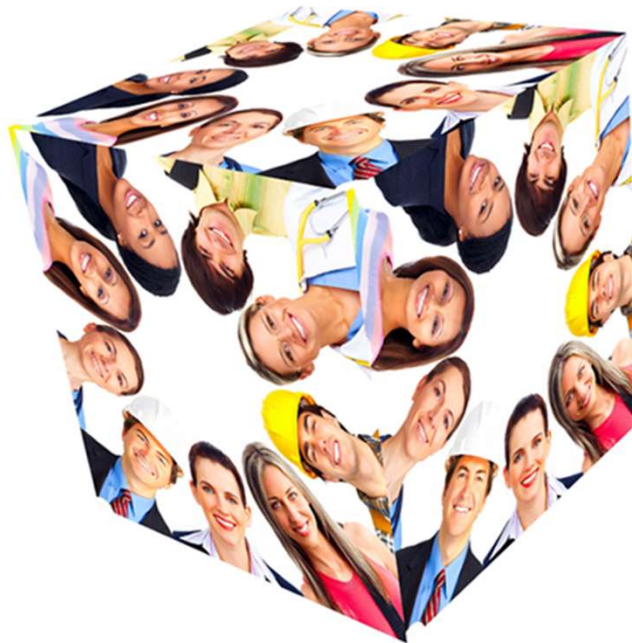
# Emerging Trends



Beyond best practices, you also want to examine emerging trends for the value stream you are about to improve.

There may be new techniques, new materials, new technology and all sorts of trends available that can help you improve your process.

# Stakeholders



Another great approach for evaluating improvement options is to simply ask your stakeholders.

Customers of your value stream know the things they wish you would improve. You should have collected a few ideas when you specified value.

Suppliers of your value stream may know of new or better ways they can help.

And, of course, workers within the value stream will have plenty of ideas.

# Creativity



One last approach is to tap into the creativity of your project team and other stakeholders.

You may recall the story of Henry Ford. He is alleged to have said: "If I asked my customers what they wanted, they would have requested a faster horse".

The message is clear: untap your creativity and find something which no one else has done.

# 12. Select Improvements



Gather your improvement options from benchmarking, exploring best practices, examining emerging trends, talking with stakeholders, and tapping into your own creativity.

Then select which ones you want to include. You can't do everything.

What is reasonable in term of cost and amount of change?

An excellent tool for reaching consensus is called RightPage, from Six Disciplines. This no-charge application can your team debate and rank your opportunities for improvement. Remember Pareto and the 80:20 rule. Only 20% of the options will get you 80% of the total possible improvement. Lean is not about jumping from current state to perfection.

This step is a big change from current state mapping – where it is simply not even done.

# Time to Map!
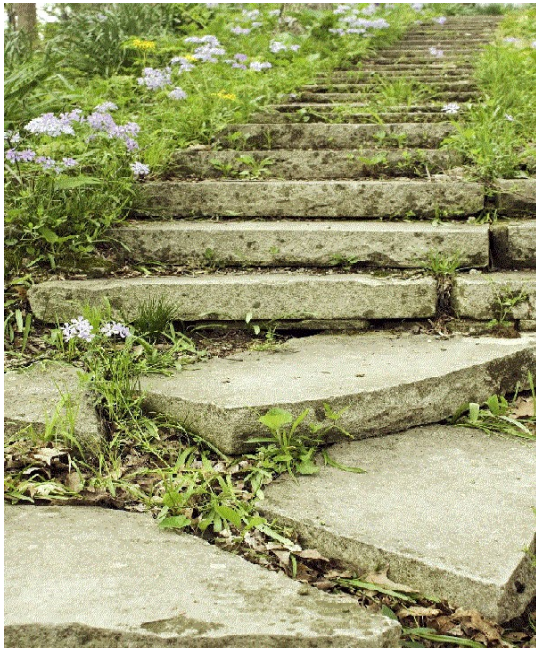
## Steps 13 to 21

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

Just 9 more steps.

# 13. Choose Approach



Just like creating a current state map, you have a number of ways to create a future state map
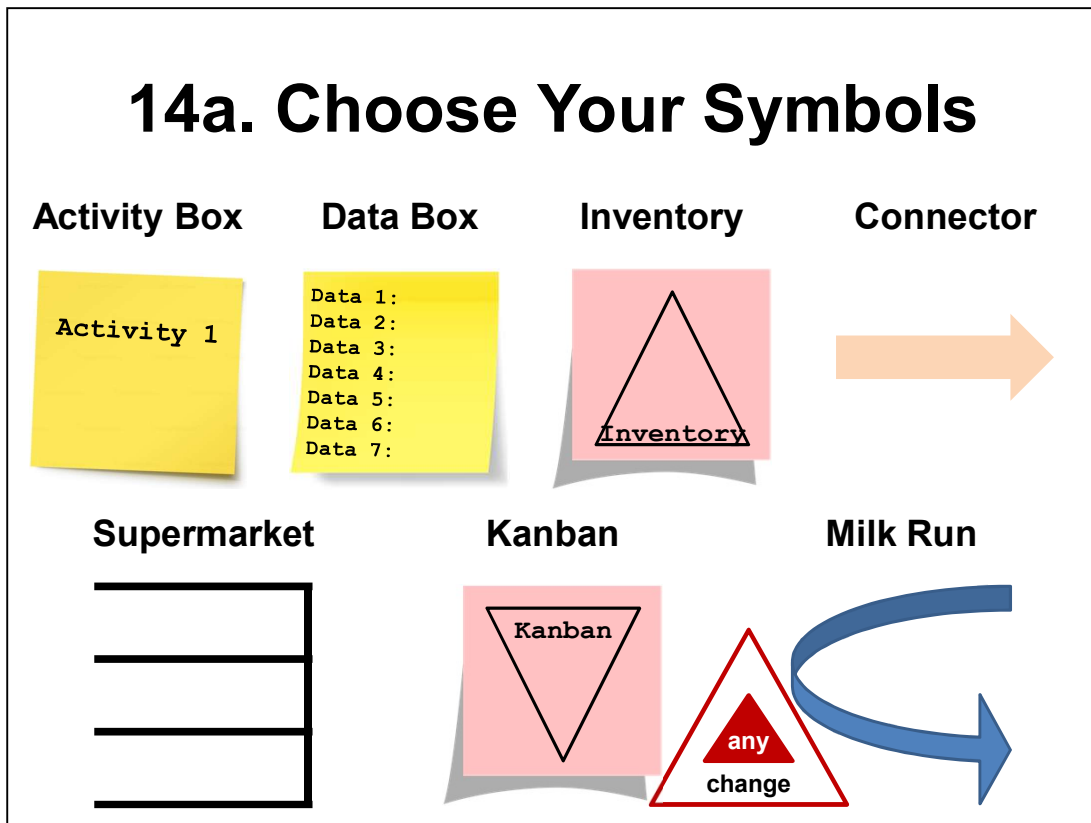
- White board
- Flip chart
- Physically walking the stream
- Butcher paper
- Software (not recommended)
- Post-it notes

For teams that 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 such as Zoom. Consider having one person focus their camera on a wall or whiteboard and use post-it notes.

For future state mapping – you only need to identify if there need to be any changes from when you created the current state map. If not, then repeat what you did for the current state mapping session.

# 14a. Choose Your Symbols

**Activity Box**  **Data Box**  **Inventory**  **Connector**

Activity 1

Data 1:
Data 2:
Data 3:
Data 4:
Data 5:
Data 6:
Data 7:

Inventory

**Supermarket**  **Kanban**  **Milk Run**
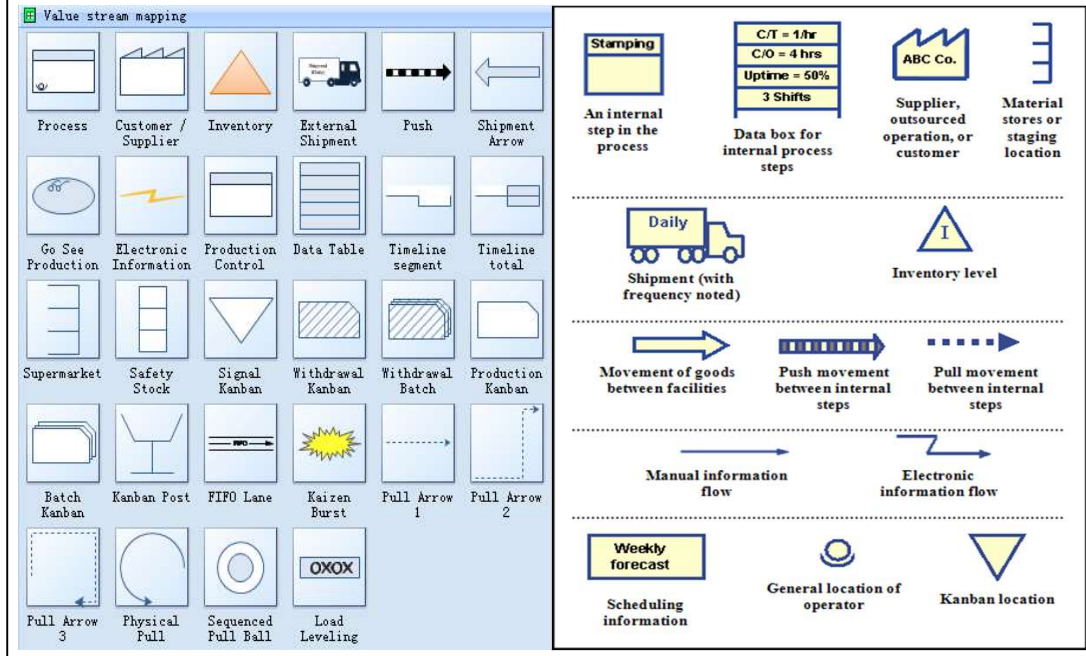
Kanban

any
change

You might want to add a few more symbols to the ones you used for current state mapping.

The top four are the ones which are used extensively for both current and future state mapping.

The bottom three might be new additions to your future state.

# 14b. Other Possible Symbols



And, of course, there are dozens of other possibilities.

Most of the rare symbols just create confusion.

# 15. Identify Big Activities

Activity 1

Activity 2   Activity 3

Activity 4

**any**
**change**

List the big activities.

For many situations, this level is fairly close to the current state.

For future state mapping – you only need to identify if there need to be any changes from when you created the current state map. If not, then repeat what you did for the current state mapping session.

# 16a. Create Future Data

| | |
|---|---|
| ✓ Cycle times | ✓ Available time |
| ✓ Changeover times | ✓ Scrap rates |
| ✓ Inventory | ✓ Equipment availability |
| ✓ Batch sizes | ✓ Method of delivery |
| ✓ Number of operators | ✓ Tools |
| ✓ Container sizes | ✓ Distance |
| ✓ Skills required | ✓ Shared resources |

**You will be creating the future; what data will be important.**
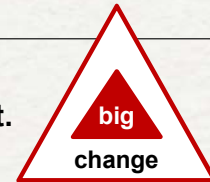
<div style="text-align:center">△ big change</div>

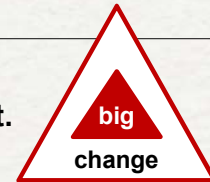Decide what information you want to put on your future state map.

You will be creating the future, so think about what data will be important.

This is a big change from current state mapping. It's not about the current information, it's about the future data.

# 16b. Create Future Data

| | |
|---|---|
| ✓ Number of shifts | ✓ Inbound Reports |
| ✓ Hours of operation | ✓ Outbound Reports |
| ✓ Number of products | ✓ Software |
| ✓ Cross training | ✓ Hazardous materials |
| ✓ Operator availability | ✓ Ergonomics |
| ✓ Approvals required | ✓ **Variation** |
| ✓ Defects | ✓ **Priorities** |

**You will be creating the future; what data will be important.**

**big change**

Software is often a big item in terms of what you want to do in the future state.

It's often not about new software; it's about getting trained on using the stuff you already have.

Cross training is another big change for many improvement projects. Do you want various activities to have cross training in place.

# 17a. Acceptable Variation
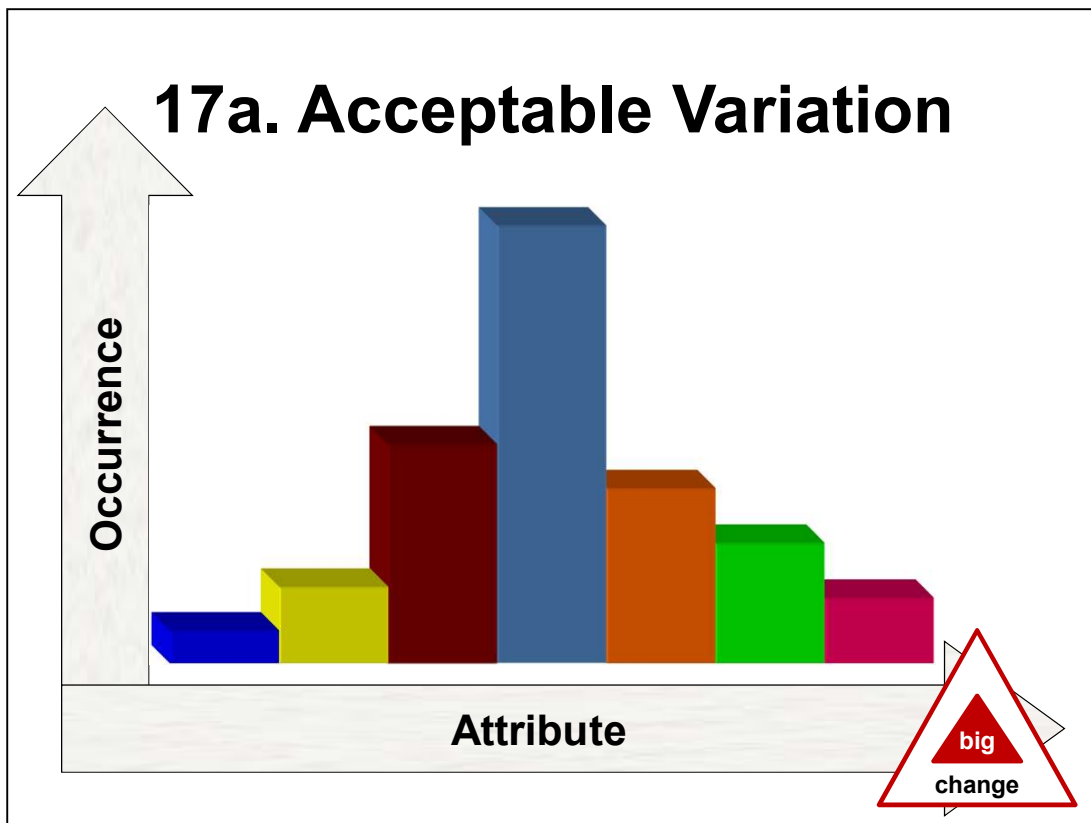


Make sure to address the variation which probably created much waste in the current state.

In most cases, you cannot jump to perfection. But, you might be able to reduce unacceptable variation by 80%.

This is a big change from current state mapping. It's not about the current variation, it's about the future.

## 17b. Establish Priorities

# How does work get prioritized?

Establish clear expectations – first in first out is one simple and common approach

**big change**
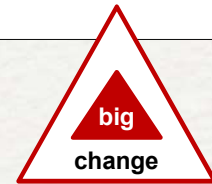
You will also need to make sure to address how work gets prioritized.

A current state will often have waste in how work is "cherry picked" to do the easy stuff first.

For a future state, many will want simple rules such as "first in first out".

This is a big change from current state mapping. It's not about the current priorities, it's about the future.
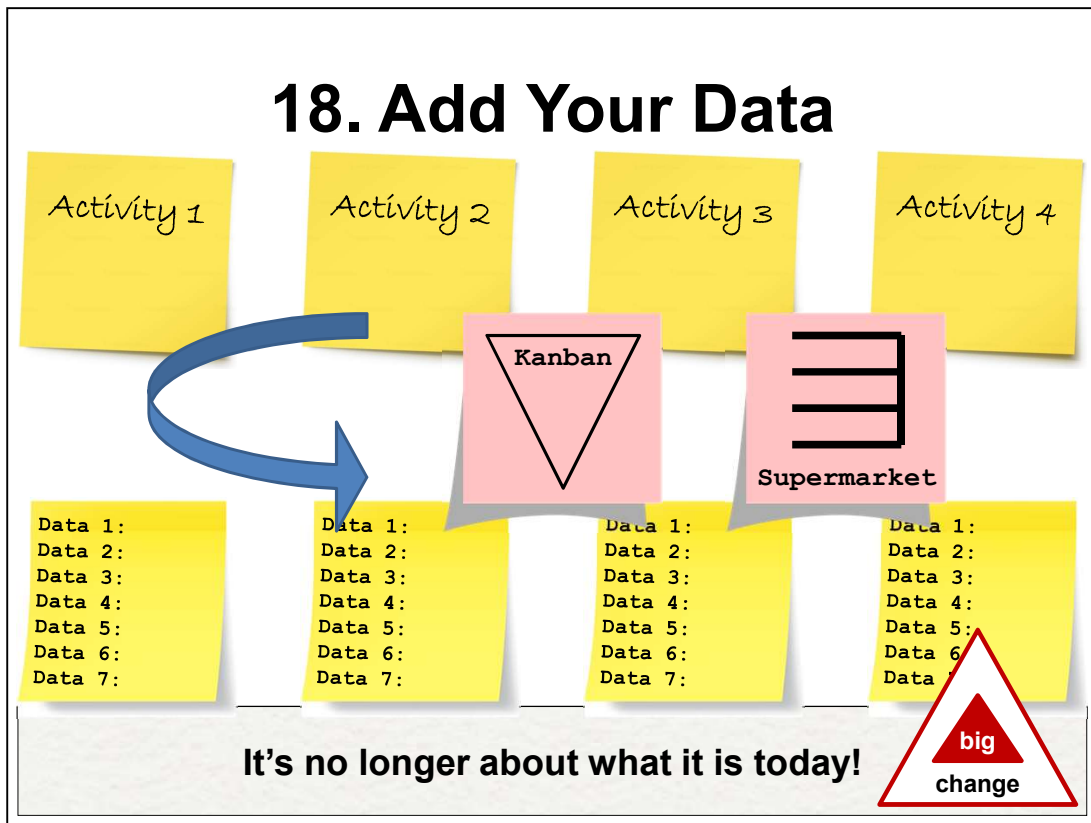
Put your future data on the map.

Many times, those uncontrolled piles of inventory will be changed to supermarkets or kanbans that are more controlled.

This is a big difference from current state mapping; it's no longer about what it is today

# 19. Something Happening

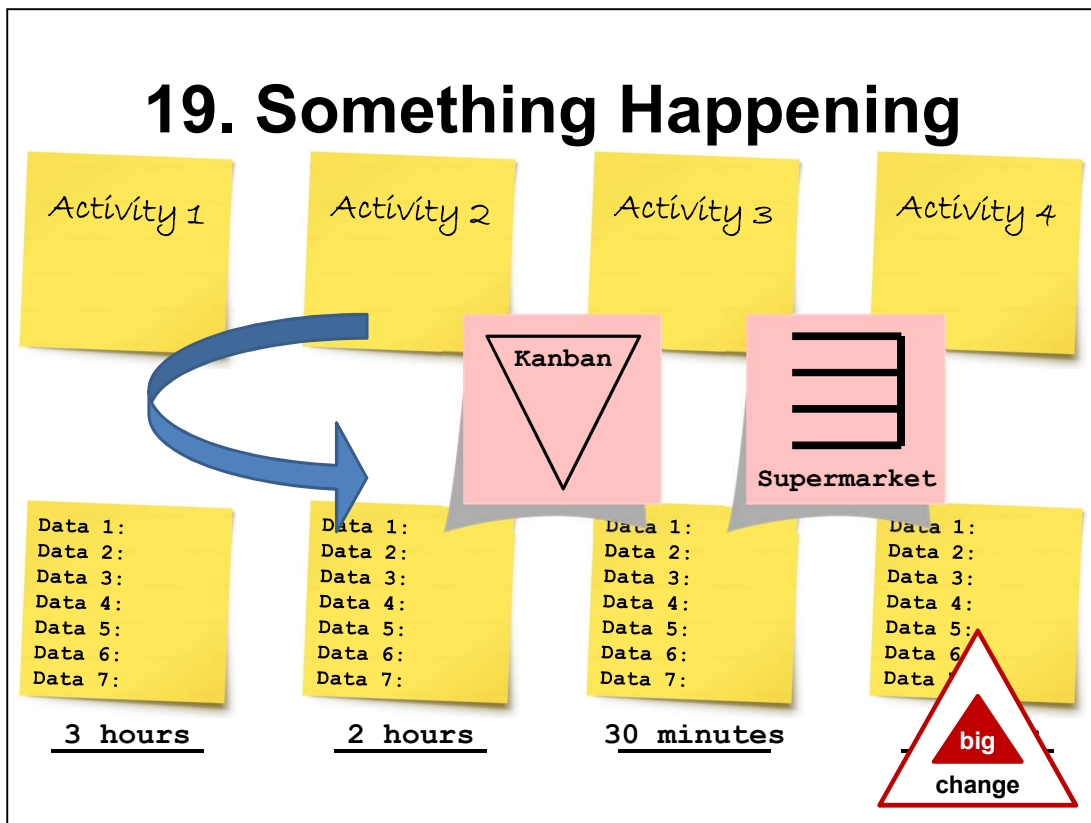| Activity 1 | Activity 2 | Activity 3 | Activity 4 |
|---|---|---|---|

Kanban

Supermarket

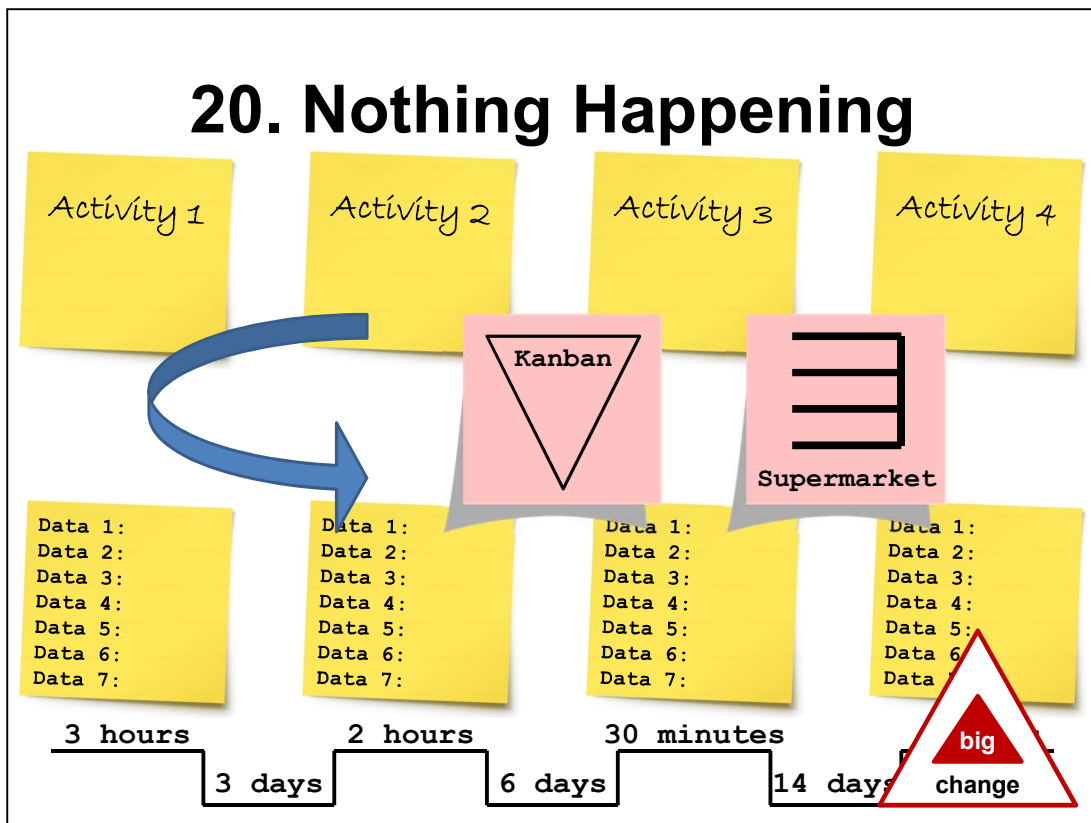| Data 1:<br>Data 2:<br>Data 3:<br>Data 4:<br>Data 5:<br>Data 6:<br>Data 7: | Data 1:<br>Data 2:<br>Data 3:<br>Data 4:<br>Data 5:<br>Data 6:<br>Data 7: | Data 1:<br>Data 2:<br>Data 3:<br>Data 4:<br>Data 5:<br>Data 6:<br>Data 7: | Data 1:<br>Data 2:<br>Data 3:<br>Data 4:<br>Data 5:<br>Data 6<br>Data |
|---|---|---|---|
| __3 hours__ | __2 hours__ | __30 minutes__ | big<br>change |

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

This is a big difference from current state mapping; the times for the future state will probably be less than you have in the current state.

# 20. Nothing Happening

| Activity 1 | Activity 2 | Activity 3 | Activity 4 |
|---|---|---|---|

Kanban

Supermarket

| Data 1: | Data 1: | Data 1: | Data 1: |
| Data 2: | Data 2: | Data 2: | Data 2: |
| Data 3: | Data 3: | Data 3: | Data 3: |
| Data 4: | Data 4: | Data 4: | Data 4: |
| Data 5: | Data 5: | Data 5: | Data 5: |
| Data 6: | Data 6: | Data 6: | Data 6 |
| Data 7: | Data 7: | Data 7: | Data |

3 hours        2 hours        30 minutes

3 days        6 days        14 days        **big change**

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

Chances are, you have reduced wastes such as waiting, inventory, and movement.

This is a big difference from current state mapping; the times for the future state will probably be less than you have in the current state.

Watch yourself and don't over-promise. You are not jumping to perfection and reducing waste to zero.

# 21. Value Add Guestimate

<div style="background:#fbe5d6;">

## Something happening

</div>

---

<div style="background:#dbeef3;">

## Total time

</div>

<div style="color:red;">▲ **big change**</div>

Make a guestimate of value add.

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

While the math is the same as you did for your current state math, you should see a big change in terms of the percentage of time when something is happening.

One team showed their project champion how the current state was about 10% and the future state would run about 25%. This was entirely achievable and the project champion asked the team to give a presentation to the board of directors.

Again, don't over-promise. For example, it's probably unwise to claim you are going from 10% to 90%.
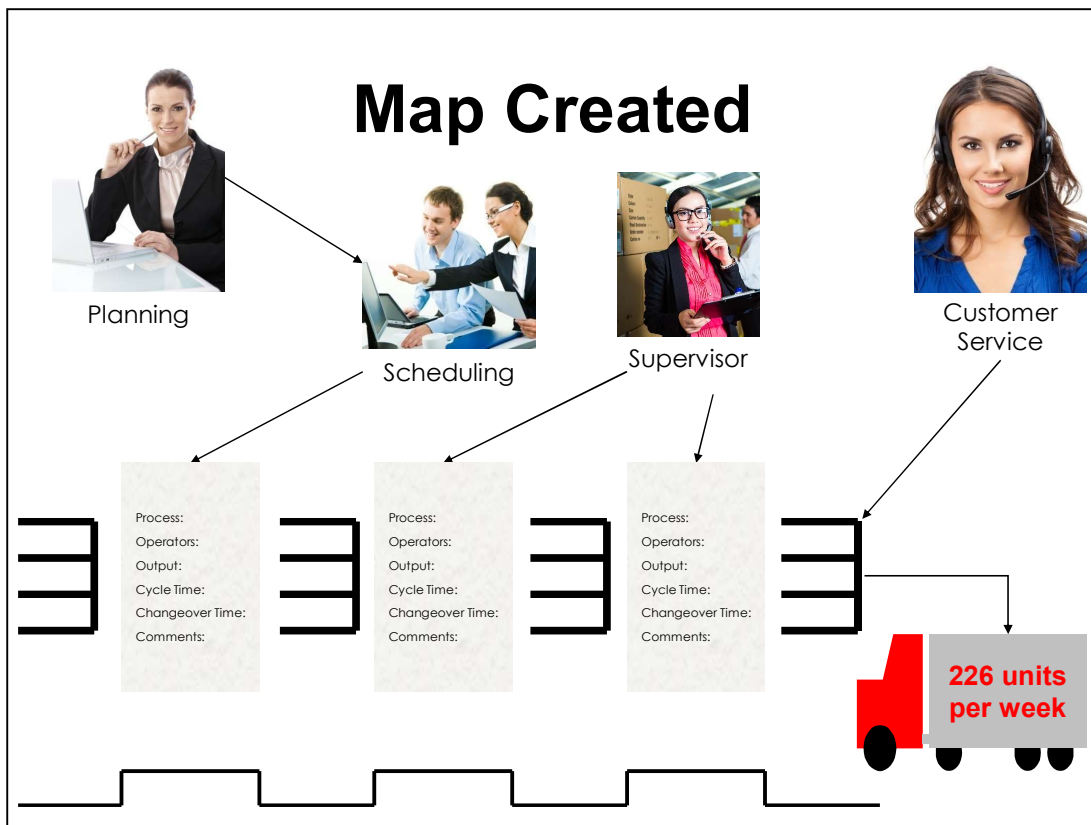
At this point, your future state map has been created.

# Final Thought

You will become a story teller!

- What is the vision?

- What will it look like?

- What will it feel like?

- How will customers respond?

- How will other stakeholders react?

A final thought.

It will take experience and time. A great mapper will become a story teller.

What is the vision of the future state?

What will it look like? Will equipment, desks, and many other things be moved to better locations? Will inventory go down and space opened for better uses?

What will it feel like? Think about the reduction in firefighting and conflicts.

How will customers respond? Are you going to make a dramatic impact on service, defects, and cycle time?

How will other stakeholders react? Everyone should benefit from a new and improved value stream.

# Summary

That wraps up the 21 steps for creating a future state map.

# Future State: 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.  Specify value
10. Champion approval

**Value stream definition**

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

# Future State: Steps 11 and 12



Steps 11 and 12 involve the evaluation and selection of improvement options.

**Future State: Steps 13 to 21**

13. Choose approach
14. Choose your symbols
15. Identify big activities
16. Create future data
17. Variation and priorities
18. Add your data
19. Something happening
20. Nothing happening
21. Value Add Guestimate

**Creating the map**

Steps 13 to 21 are designed for creating the map.

# End of Future State Mapping