Value Stream Mapping for Intermediate Practitioners, Prioritizing Projects and Selecting the Right Tools

(Two-hour Lean Certification Workshop)

Katja Lehmann, PhD
Lab Quality Confab, 2018
Atlanta, AL

BD

Credentials

Quality Management

2001 - 2003

Six Sigma Black Belt

2003- 2005

Global Healthcare Consultant

since 2016

BD MPD Program™

Measure, Predict, Deliver

Global Solutions Optimizations Specialist

2012-2016

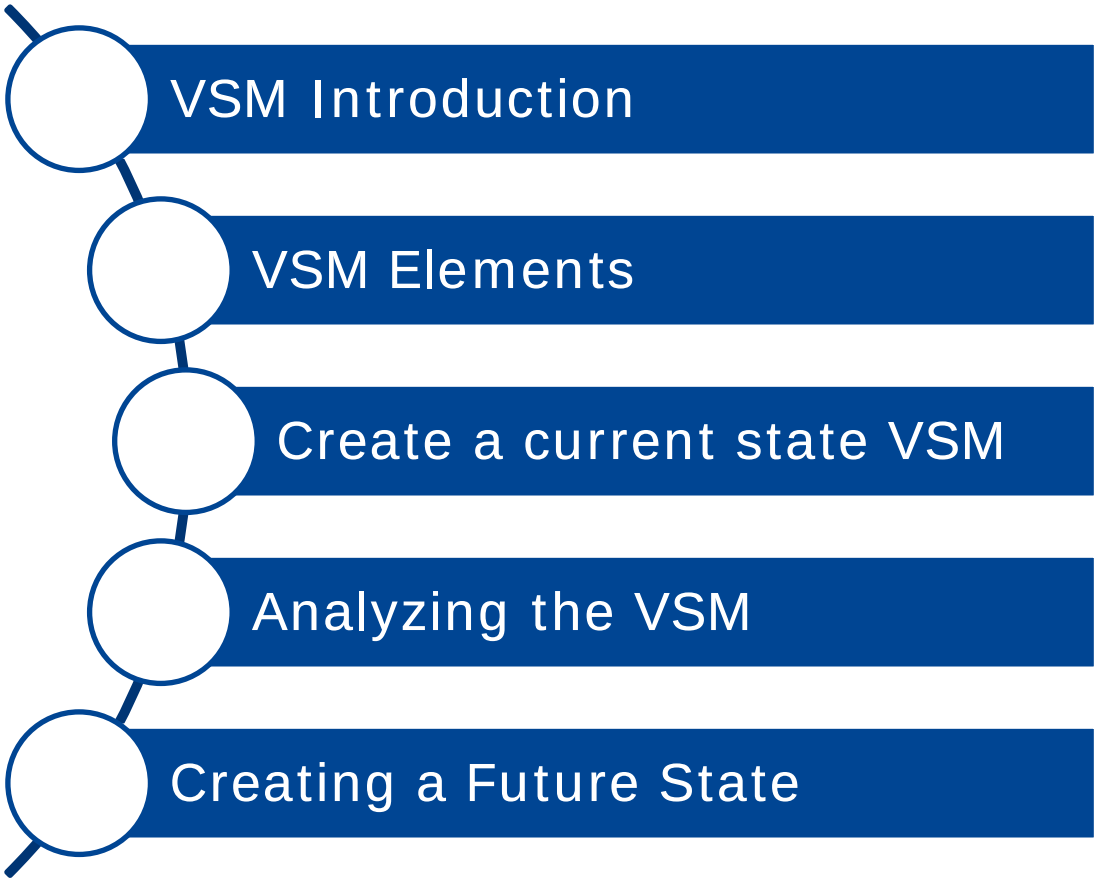
Workflow Consulting

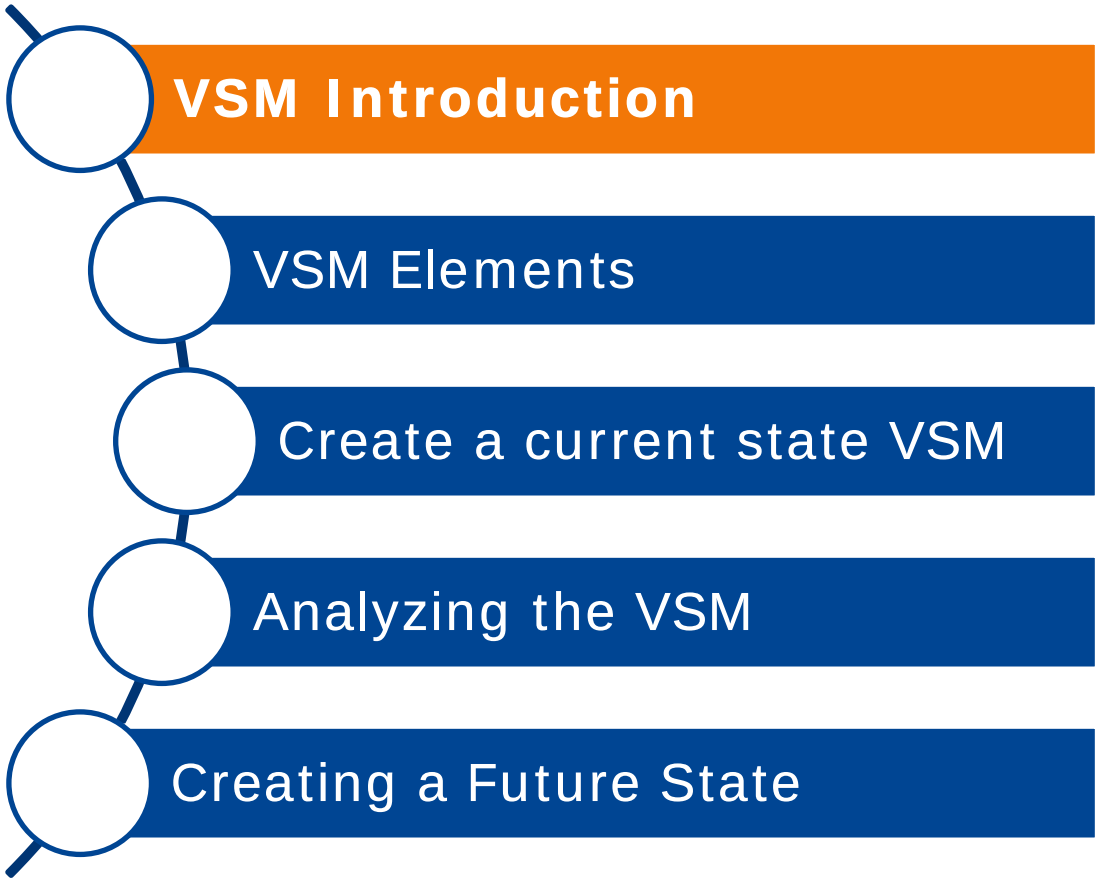
2009 - 2012

DBSL

2005 - 2009

Topics


VSM Introduction
VSM Elements
Create a current state VSM
Analyzing the VSM
Creating a Future State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Definition

A Value Stream is

The set of activities required to deliver a product or service (or product family) to your customer.
The product can be physical, information or materials

A Value Stream Map (VSM) is

A visual tool that maps the process how the material and information flows

VSM Levels

- Single department within an organization (e.g., bacteriology)
- Multiple departments within an organization (e.g., microbiology)
- Single institution (e.g., hospital)
- Multiple institutions (e.g., hospital network)

Advantage

When striving for Continuous Flow, VSM is an important tool to create a roadmap for the improvement opportunities

A VSM provides a “big picture” view of the current state Value Stream and it’s sources of waste

This scope is needed to avoid selective implementation of improvement efforts, resulting in islands of success within a sub-optimal process

VSM is extremely straight forward

Provides a blueprint for the future state and follow up action

Opportunities for improvement are obvious

Beware

- A VSM is a snapshot in time the day the process is observed, and does not deliver statistical relevant data
- A VSM does not fix the process – it visualizes where the improvement opportunities are
- VSM is an analytical tool to highlight inefficiencies in your process flow

Benefits

The big picture

Focus on each sample type and its Value Stream rather than the organizational design

Allows leader to translate business strategy into site deliverables

Basis for the implementation plan and budgeting

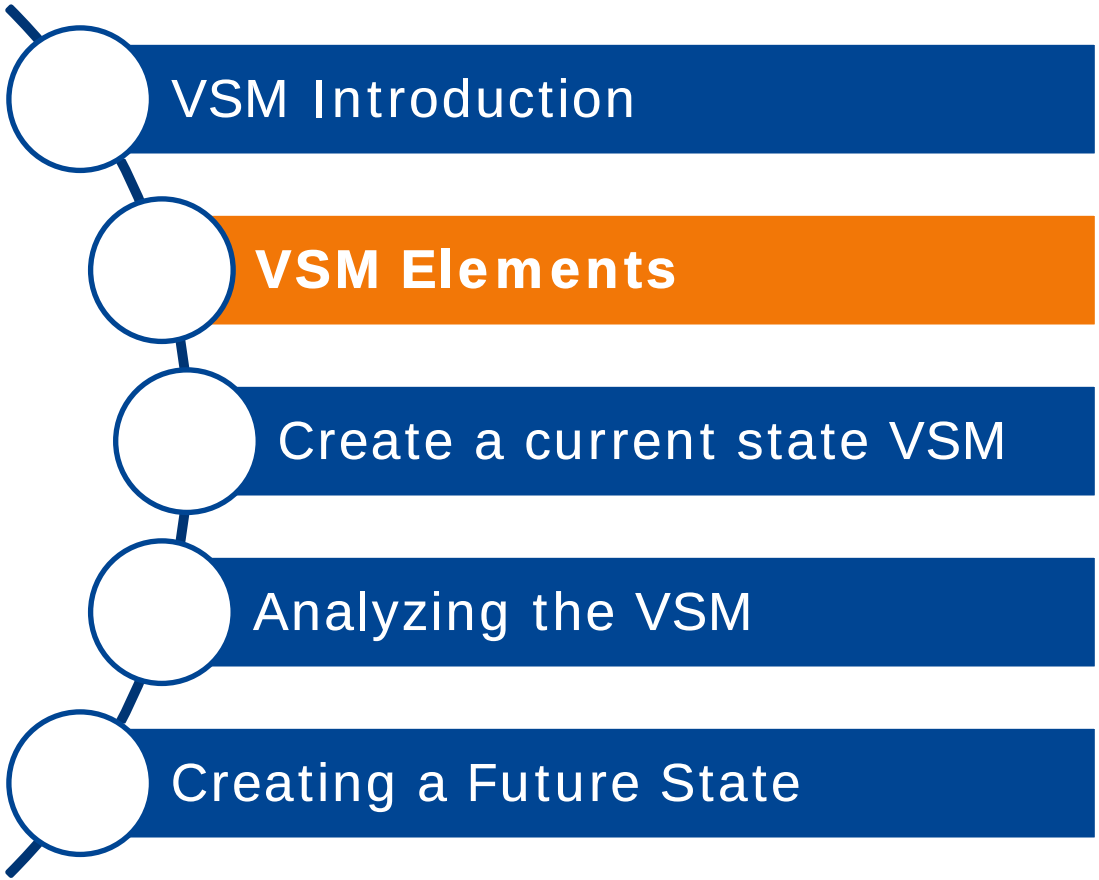
Ties together Continuous Improvement techniques

Lean

Six Sigma

Validation

Executive steering committee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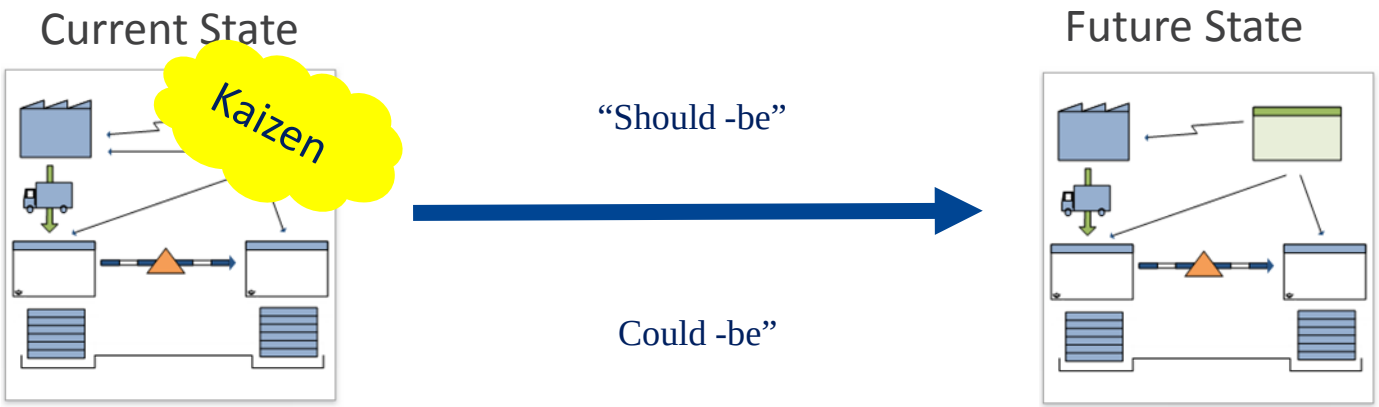
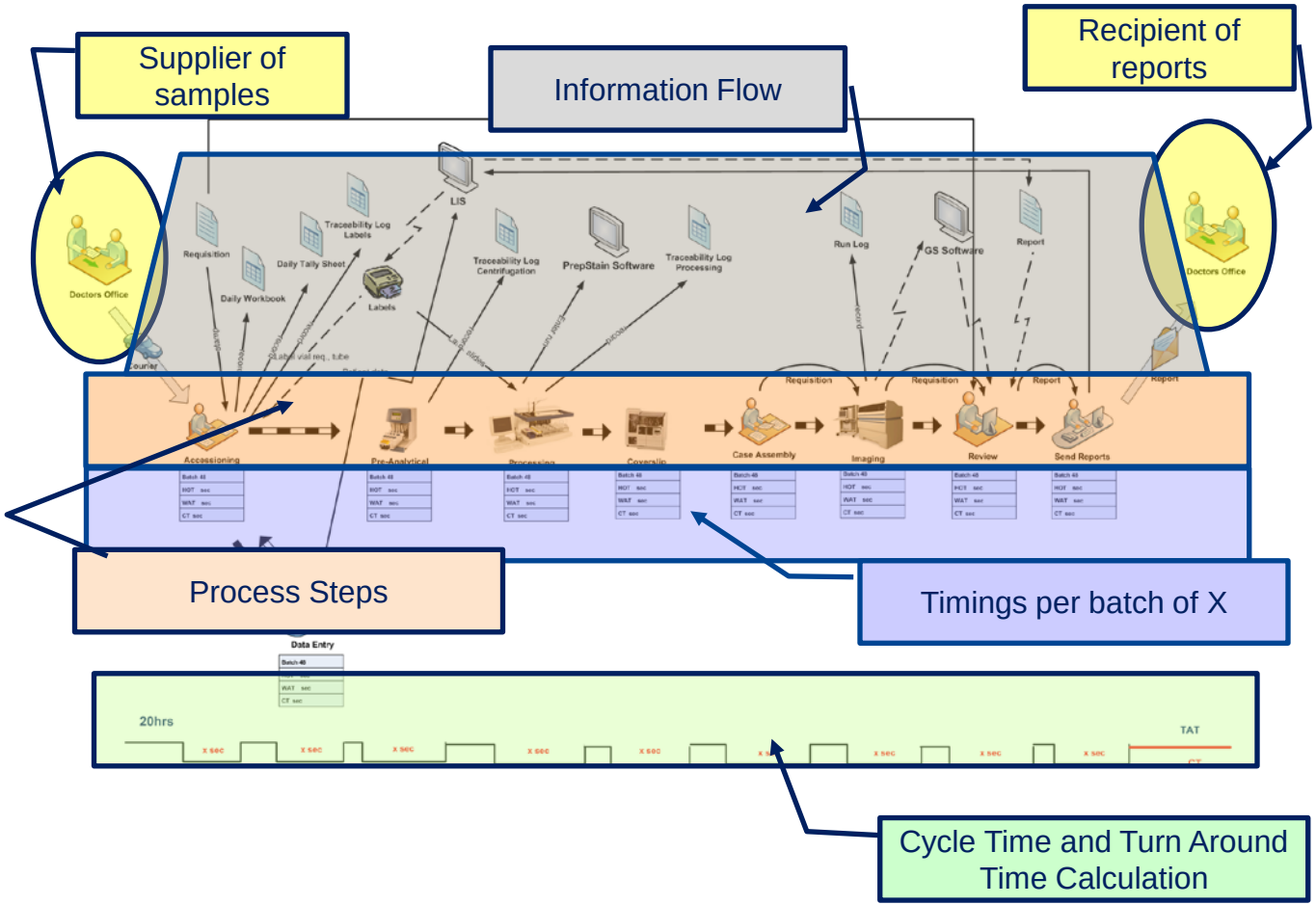
Tool overview

A process improvement tool Identifying “as-is” process and improving them by creating “to-be” processes



The only way to improve is by eliminating waste!

Elements of a VSM



Takt Time / Cycle Time / Turn Around Time

Takt Time

Cycle Time

Turn Around Time

Takt Time (TT)

Frequency to Produce a Quality Result

Customer Demand = Daily Workload

$$TT = \frac{\text{Available Time per Day}}{\text{Customer Demand per Day}}$$

Cycle Time (CT)

- CT = Total Time required to complete the process
- HOT (Hands On Time)
- WAT (Walk Away Time)
- CT = HOT + WAT

Cycle Time vs Takt Time

Cycle Time = What we can do

Takt Time = What we need to do

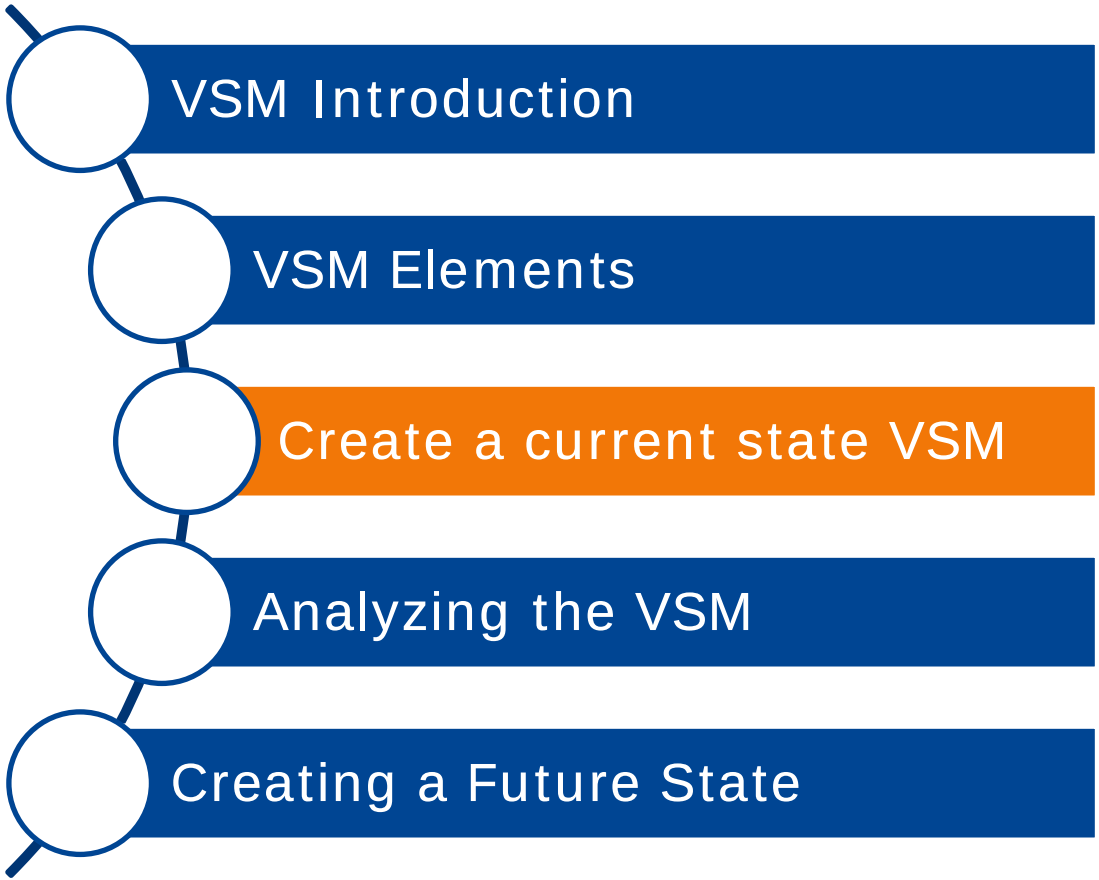
Turn Around Time (TAT)

Total Process Time including Wait Time

TAT = Cycle Time + Wait Time

TT / CT / TAT – Benefits

- Base line for improvements
- Identify customer demand (TT)
- Focus what / where to improve
- Measure the impact of process improvements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Project Charter

If you don't put what you are doing in writing, you will probably let the project slide and grow to the point that it is unmanageable

Elements

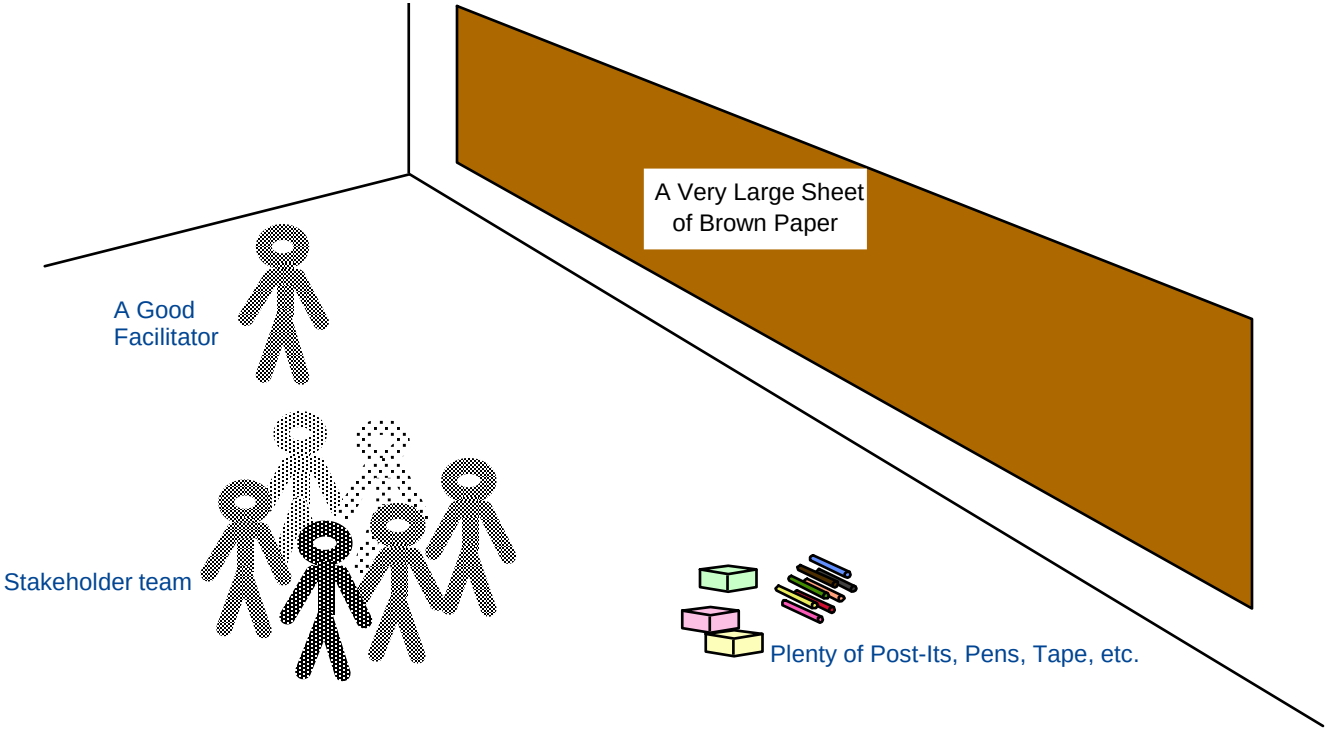
- ✓ Scope of the project
- ✓ Who is on the team?
- ✓ When will the event happen?
- ✓ Where will it take place?
- ✓ What do you want to accomplish?

Sequence current state

Begin by mapping a single process within a department or business unit

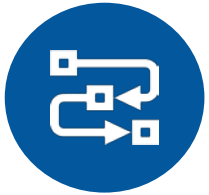
- Target processes that have a lot of potential / opportunities
- Obtain necessary commitment of resources
- Start at the end of the process and move upstream
- Define metrics to measure progress
- Refine the future state value stream map as necessary

The team


A Very Large Sheet
of Brown Paper
A Good
Facilitator
Stakeholder team
Plenty of Post-Its, Pens, Tape, etc.

The team

VSM is teamwork



Ensure the process can be observed that day

Inform employees about the event

Assign roles for observation

Who asks questions?

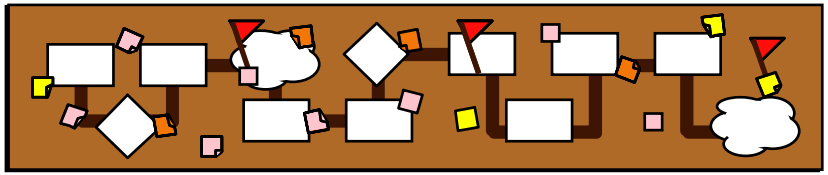
Who traces walking patterns?

Who is recording time?

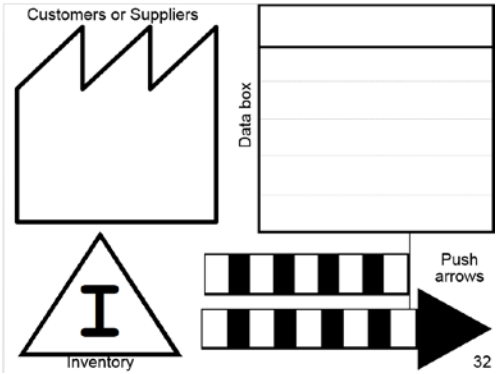
Who is recording process steps and information flow?

Who is recording waste?

Mapping tools during VSM event



Brown Paper / Flip charts

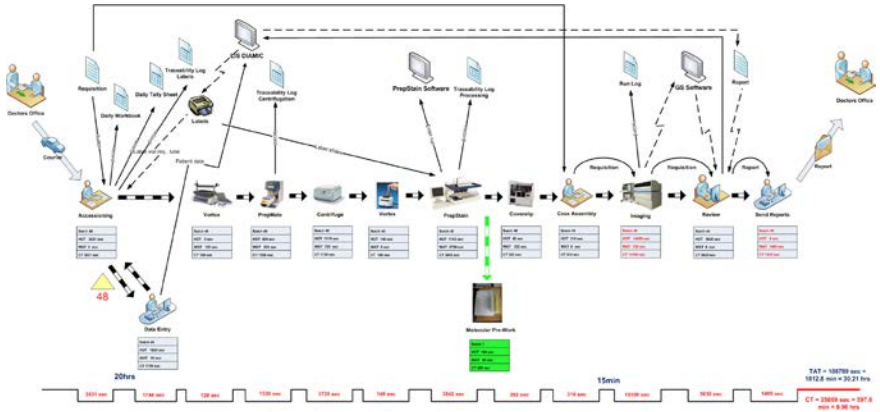


Pre-cut icons, post it notes, markers

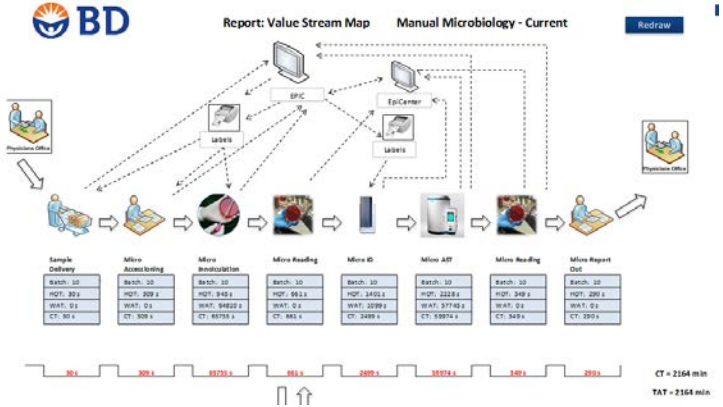
Advantage

Icons and post it notes are moveable and can be rearranged until the final VSM is created

Documentation tools after VSM event



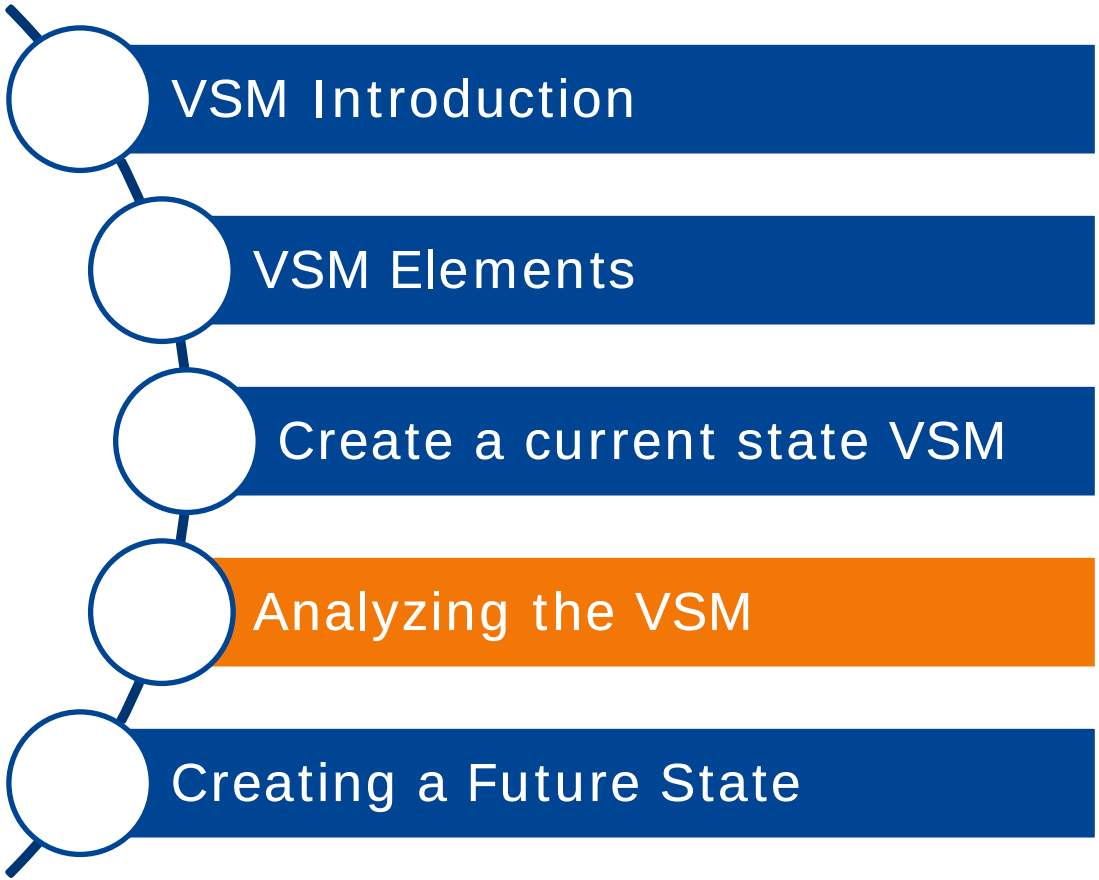
MS VISIO Software



Excel based Software

Advantage

Permanent record keeping and “presentation friendly”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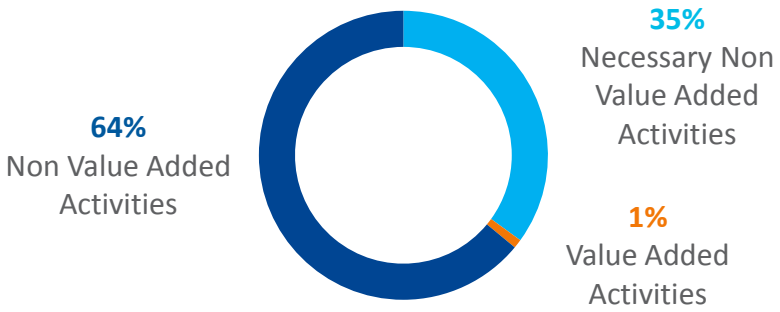
Objective

- Correct specification of value
- Elimination of wasteful steps
- “Flow where you can”
- “Pull where you can’t”
- Management toward perfection

Value

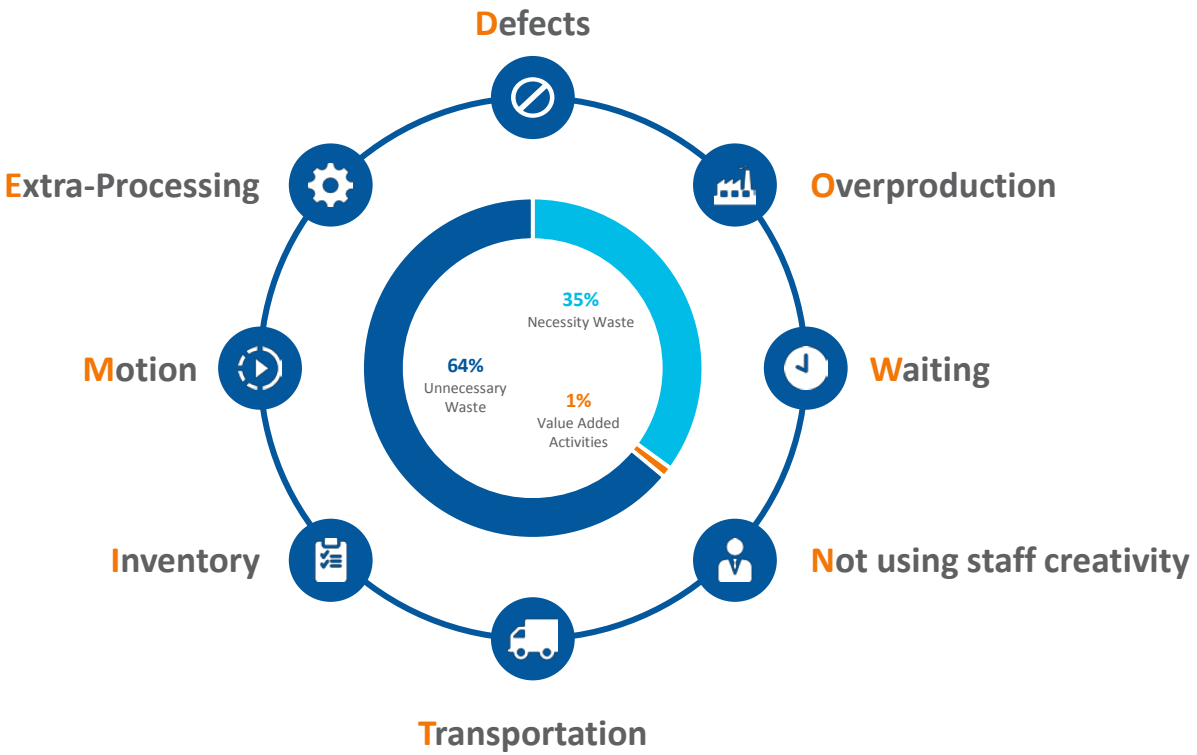
To design a smooth process flow, “process wastes” or non-value added process steps are identified and removed



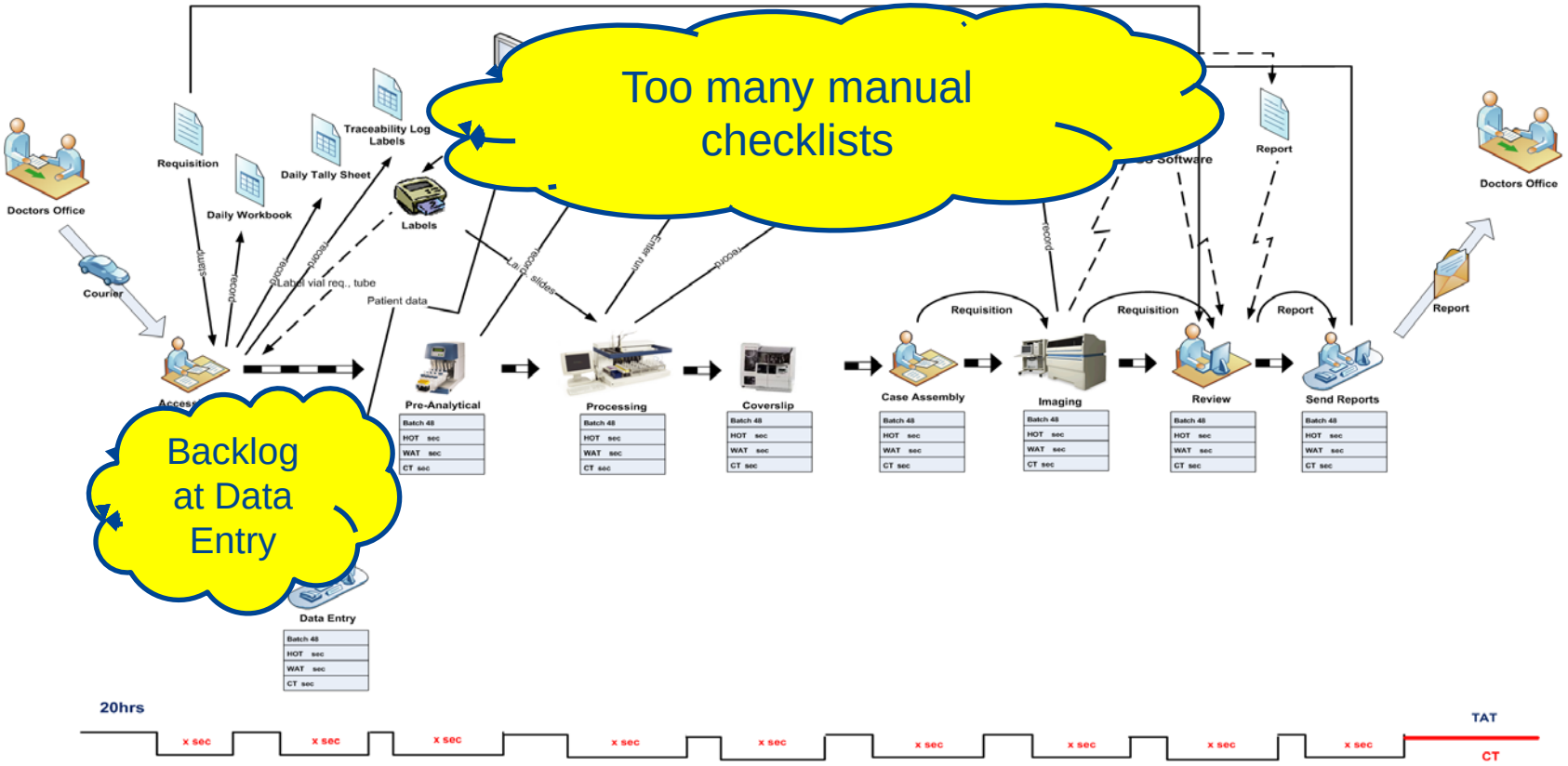
Value Added Activities	Necessary Non-Value Added Activity	Non-Value Added Activities
an activity that transforms or shapes material or information to meet customer requirements	can be classified as enabling or incidental: maintenance, calibration, quality control	an activity that takes time or resources but does not add value to customer

The Eight Process Wastes

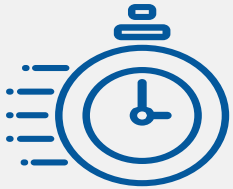
Remember DOWNTIME



Example: Current-State Value Stream



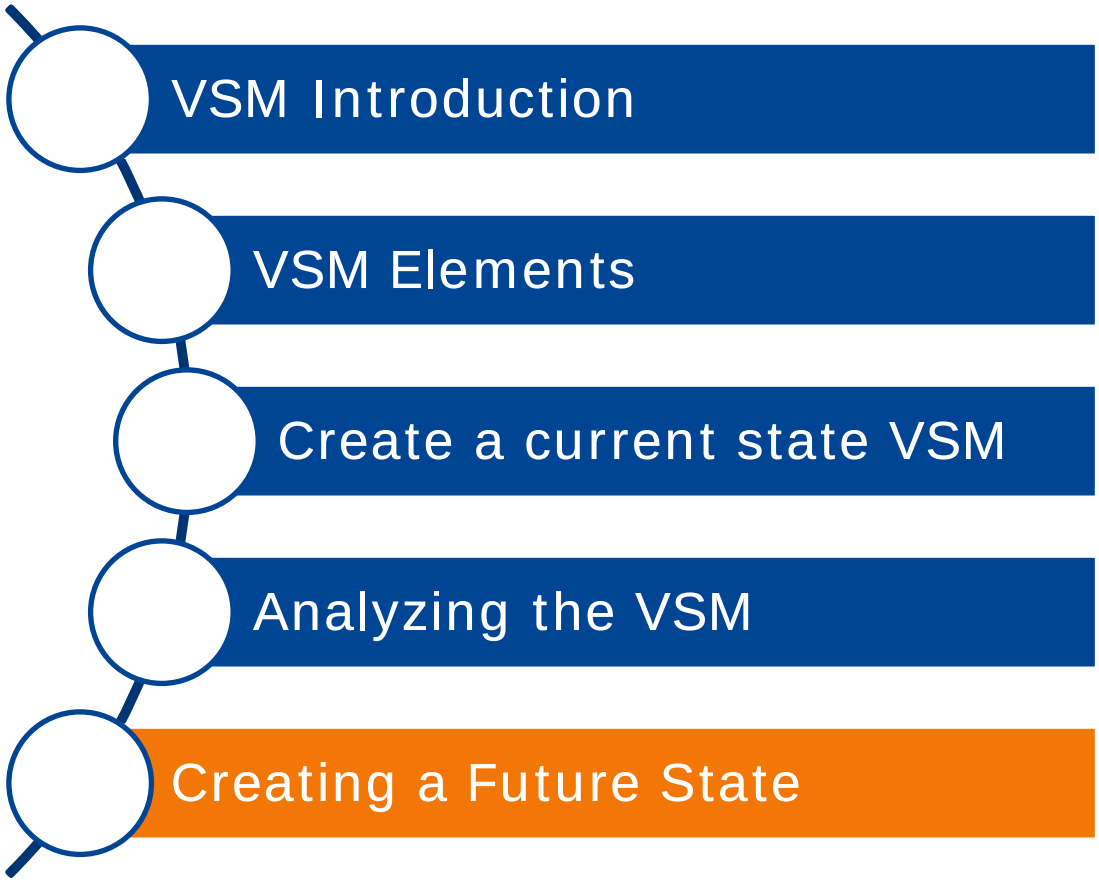
Let’s create a current state VSM



60 minutes

- 5 min review of process map provided
- 25 min creation of VSM
- 10 min waste identification
- 20 min present to the group

1. **Split into groups**
2. **Review process map provided**
3. **Create current state VSM**
4. **Identify Wastes**
5. **Present to the group**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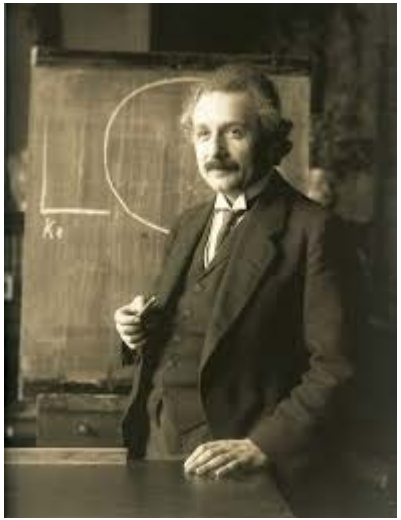
Create a future state

- Identify opportunities (wastes, value)
- Review “as is” with all stakeholders
- Draft future state VSM
- Analyze gaps and develop action plan
- Implement metrics to measure success

Breakthrough Thinking

“The Problems That Exist in the World Cannot Be Solved by the Level of Thinking That Created Them”



-Albert Einstein

Lean Thinking

- Focus on each product and its value stream rather than the organization, it’s assets, and technologies
- Ask which activities are waste and which truly create value
- Then enhance the value & eliminate the waste!

Stakeholder questions

question – obtain answers – investigate - challenge

Why do we perform each and every step?

Can the order of the steps be changed?

Are there any steps that are labeled “Value” that we can combine?

Because the process has been performed for so long, are there any assumptions that may not be accurate?

Are the current controls suitable for the process?

Which steps create value for the customer?

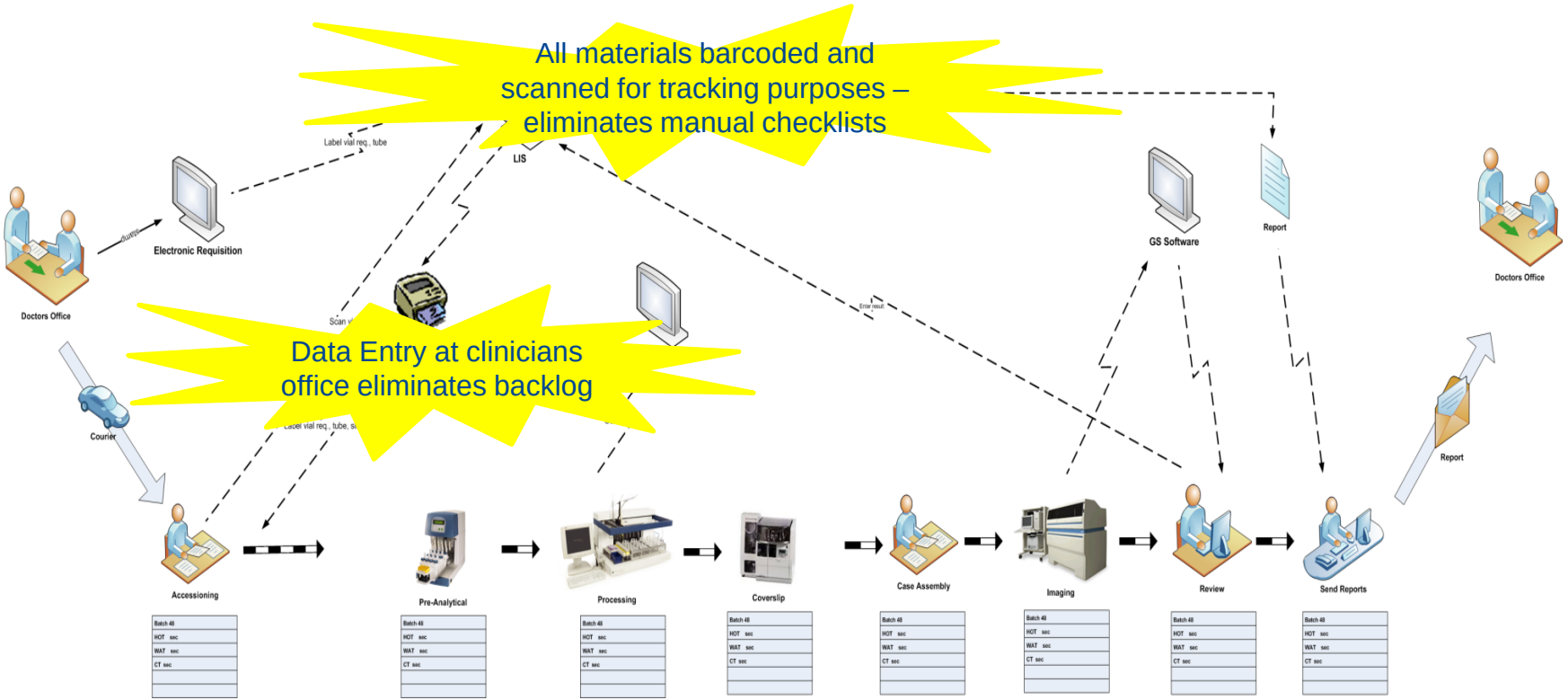
What does the customer really need as an output?

Which non-value added steps can be removed from the process?

Do each of the steps create waste based on their order?

What kind of metrics are we going to ensure that the new process is working?

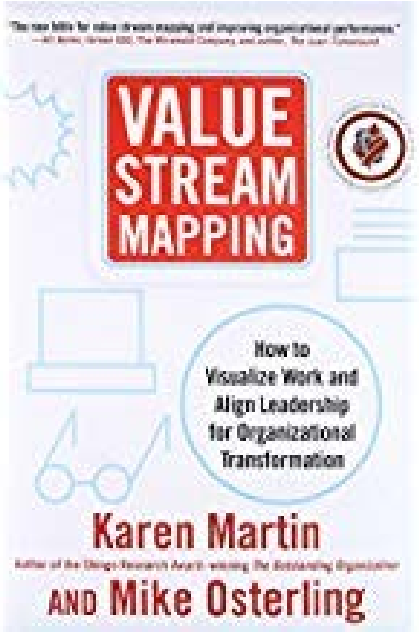
Example: Future-State Value Stream

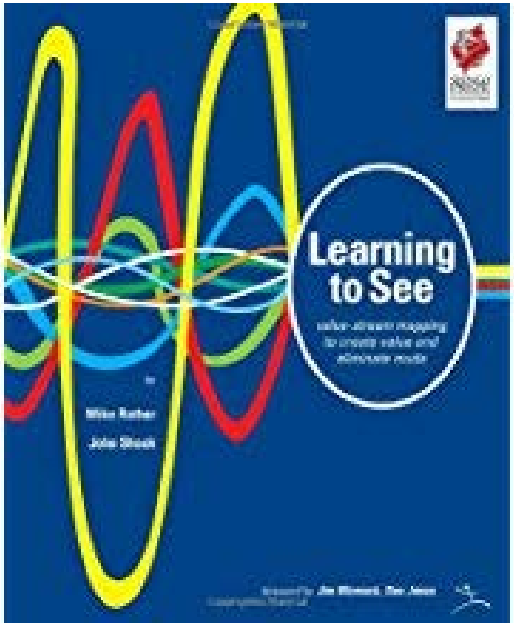


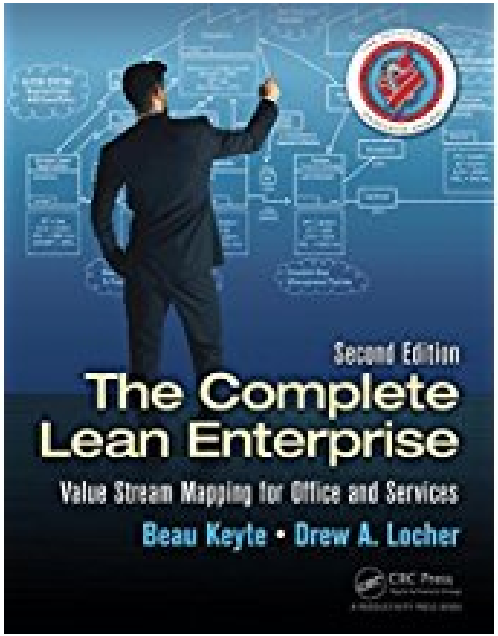
Action plan template

Strategy (How)	Action (What)	Responsible (Who)	Location (Where)	Timing (When)
Conduct Kaizen in Specimen Delivery Area	Data Entry Process from External Delivery to specimen dropped off in departments	Jane Doe	Building X	October 8th-12th
Work with LIS vendor to automate transfer of results	Meeting with Lis vendor to discuss automation of result transfer from equipment to LIS	John Doe Jr	Building Y	October 17th

Literature


VALUE STREAM MAPPING
How to Visualize Work and Align Leadership for Organizational Transformation
Karen Martin
AND Mike Osterling


Learning to See
Mike Rother
John Shook


Second Edition
The Complete Lean Enterprise
Value Stream Mapping for Office and Services
Beau Keyte • Drew A. Locher
CRC Press

Questions?

Katja_Lehmann@bd.com