

# The Lean Enterprise

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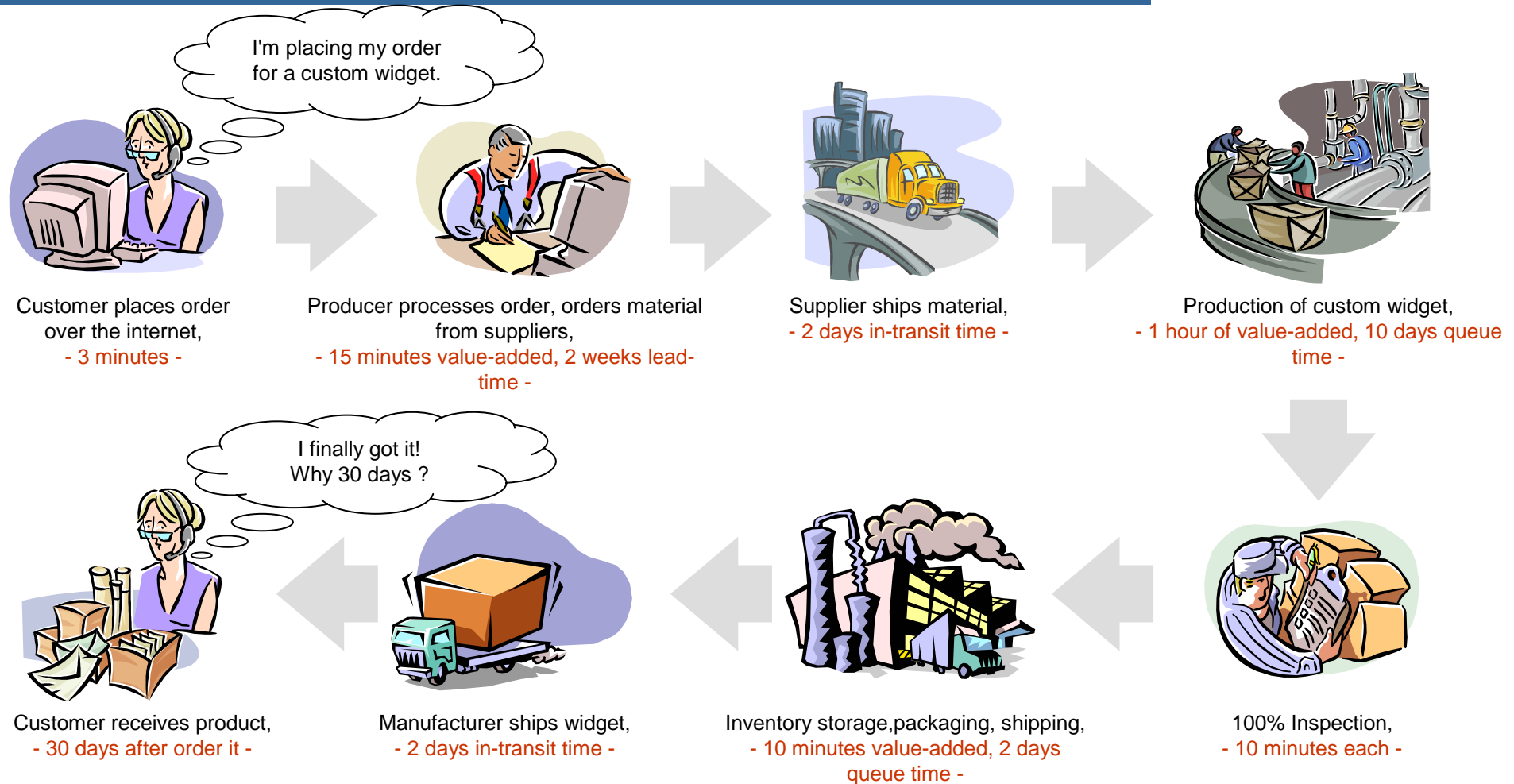
## Value Stream Mapping

# Overview

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- What is Value Stream Mapping ?
  - Value Stream Mapping is a method of creating a "One page picture" of all the processes that occur in a company, from the time a customer places an order for a product, until the customer has received that product in their facility.
  - The goal is to depict material and information flows across and throughout all **Value-Adding Processes** required to produce and ship the product to the customer. Value Stream Maps document all of the processes used to produce and ship a product, both Value-Adding and Non-Value-Adding (Waste) processes.
- Why Value Stream Map ?
  - During the team creation of a Value Stream Mapping, business and manufacturing waste that occur in the processes can be easily identified.
  - Once the Current State Value Stream Mapping is created, it becomes the baseline for improvement and for the creation of a Future State Value Stream Mapping. The FSVSM can then be used as a World Class Manufacturing implementation road map.

# Value Stream Mapping Example



■ Elapsed Time from Order to Delivery : **30 Days.**

■ Value-Added Time : **1 Hour, 25 Minutes.**

# Four Steps to Value Stream Mapping

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1. Define and Pick the Product or Product Family.
2. Create the "Current State" Value Stream Mapping (CSVSM).
3. Create the "Future State" Value Stream Mapping (FSVSM).
4. Develop an Action Plan to make the FSVSM the CSVSM.

# Step #1 – Define Product or Product Family

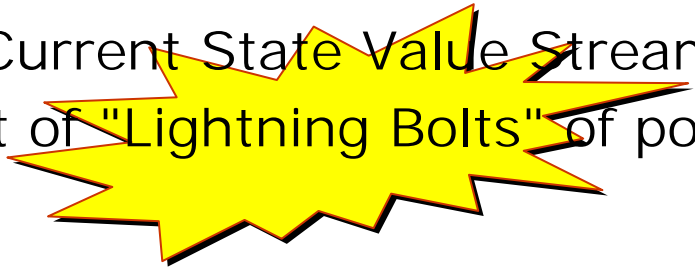
- Define Product, or
- Define Product Family.
  - Products Sharing Common Processes ?
  - From Order Entry to Shipment.
  - Search for Commonality; Main Processes, Optional Processes, ...

Description	Product	Product Family	Process				
			L101 Coils Bending		L101 Unit Brazing	L101 Unit Ass'y	L101 Unit Packing
			Machine	Labor	Labor	Labor	Labor
TWK 530 NBL	22227777-000	1			X	X	X
TWK 530 NBL-OC	22227777-CDT	1			X	X	X
TWK 536 NBL	33338888-000	2	X	X	X	X	X
TWK 536 NBL-OC	33338888-CDT	3		X	X	X	X
TWK 048 NBL	44447777-000	2	X	X	X	X	X
TWK 048 NBL-OC	44447777-CDT	2	X	X	X	X	X

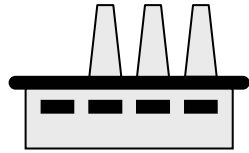
# Step #2 – Create the "Current State" VSM

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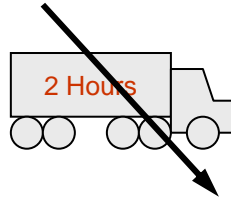
- Define the scope of the Value Stream Map.
  - Walk the process from end to end.
- Agree upon the symbols, icons, and data to use.
- Brainstorm an initial map.
- Determine missing information the VSM requires.
- Make assignments to gather and create information, "Go See" the process.
  - Collect as much information about causes of waste as possible.
- Build the Current State Value Stream Map (CSVSM).
- Make a list of "Lightning Bolts" of potential improvements.



# Step #2 – Typical VSM Symbols



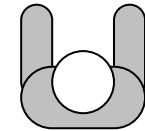
Customer or Supplier Plant



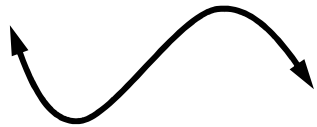
Trucking and/or Logistics



Lightening Bolt of Opportunity



Peaople Operator



Electronic Information Flow



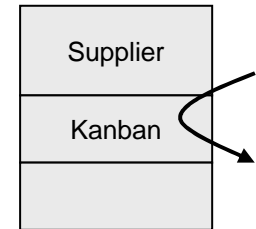
Inventory



Push of Production

Punch
(13) Items
10 Min Setup
1 Person
20 Min

Data Box



Kanban Exchange "Pull"



"Go See"



5 Days  
Tombstone Inventory Waste



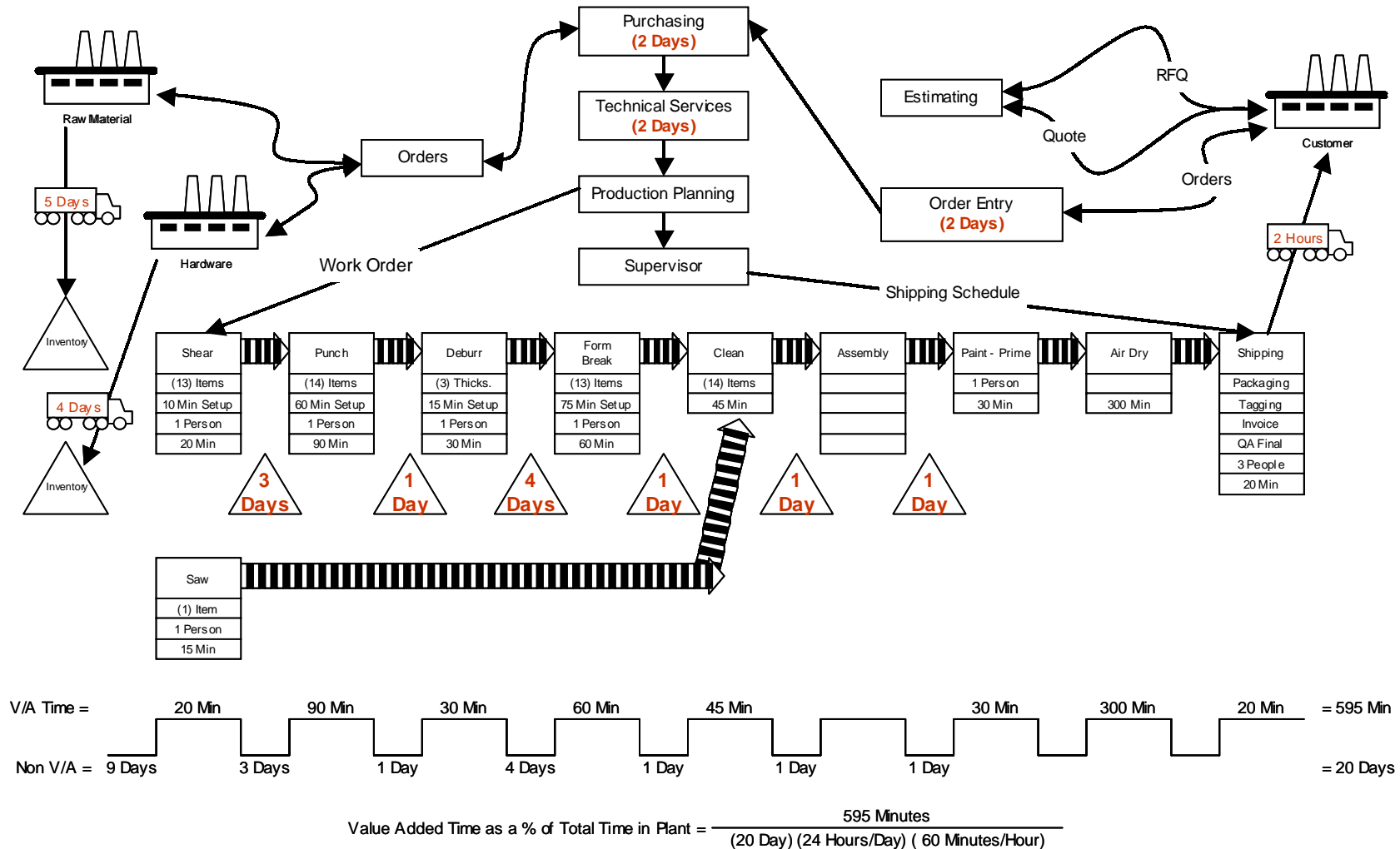
Information Flow



Timeline of Value-Added Activities Vs. Non-Value-Added Activities

# Step #2 – Create the "Current State" VSM

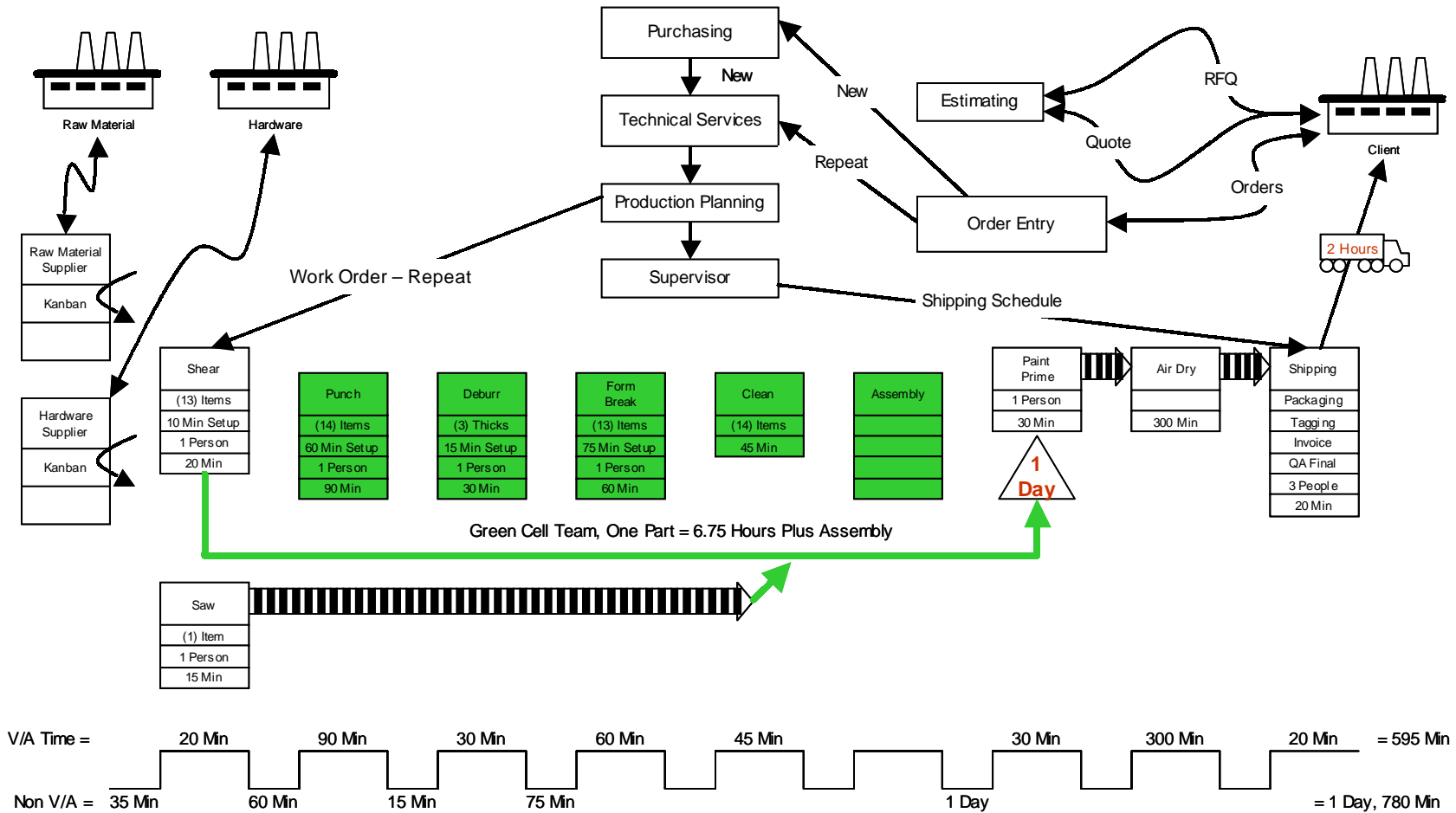
## Current State Map – 20 Days Lead-Time





# Step #3 – Create the "Future State" VSM

## Future State Map – "Green Cell Team" – 5 Days or Less Lead-Time



$$\text{Value Added Time as a \% of Total Time in Plant} = \frac{595 \text{ Minutes}}{(24 \text{ Hours/Day}) (60 \text{ Minutes/Hour}) + 780 \text{ Min}}$$

= 26.8%

# Step #4 – From "CSVSM" to "FSVSM"

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- An initial "Kick Off" event involving all stakeholders is recommended.
  - Everyone can be informed on what was learned in the process, and what we will be doing about it in a non-threatening manner.
- Schedule regularly meetings for all participants.
- Teams need a structure to work on problem solving and to complete tasks.
  - Progress on goals and support for the process needs to be verified continuously.
  - Information on progress needs to be collected and periodically reviewed with top management.
- Teams created to work on various improvements may or may not include members of the Value Stream Mapping Team. The emphasis should be on putting the right members on a team to complete various projects.
- ...

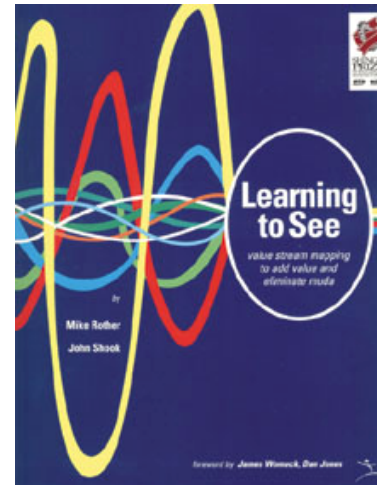
# Step #4 – From "CSVSM" to "FSVSM"

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- ...
- Initially, great care is needed to ensure that teams are supported with a skilled facilitator and the resources to meet the goals.
- Ongoing communications on progress needs to be continuously reinforced.
  - Monthly "all hands" meetings along with posted information during each month can be an effective way to ensure good communications with all involved.
- Implement a "Top-Level Report-Out" for the entire company.
  - Post in a conspicuous place three Value Stream Maps :
    - The Original Current State.
    - The Desired Future State.
    - The "Virtual" Current State – Where the team stands now.
  - A simple and visual comparison of the three value stream maps can speak progress!

# Recommended Reading and Software

- "Learning to See" by Mike Rother and John Shook.
- eVSM 2002 Software.
  - The Lean Institute.
  - Web Site : [www.lean.org](http://www.lean.org)



- The Lean Enterprise Memory Jogger.
  - GOAL/QPC – 2 Manor Parkway, Salem, NH 03079-2841
  - Web Site : [www.goalqpc.com](http://www.goalqpc.com)

