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InstitutoLean.org

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The Next Step for Lean Thinking: Lean Tools to Lean Management

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Ages of Lean: Invention & Innovation

- 1937 to 1977:

✓ Fulfillment from order to delivery (TPS), Taiichi Ohno

✓ Product and process development, Kenya Nakamura

✓ Supplier management, Kiichiro Toyoda

✓ Customer management and support, Shotaro Kamiya (deployed in Japan only)

✓ Enterprise management, Eiji Toyoda

Ages of Lean: Discovery

- 1977-1990:

✓ Fujio Cho et al: TPS article in English engineering journal

✓ Pilgrimages to Japan

✓ Proof of concept in a new (US) environment: Kawasaki in Nebraska, Honda in Ohio, NUMMI in California, Toyota in Georgetown, Kentucky

Ages of Lean: Diffusion Beyond Auto

- >1990 and accelerating today:

✓ Aerospace and general manufacturing in early 1990s

✓ Healthcare from mid 1990s

✓ Retail from later 1990s

Ages of Lean: Tools

- > 1990:

✓ 5S

✓ Jidoka/autonomation: poka-yoke, andon, line stops, etc.

✓ Set-up reduction for smaller batches: SMED

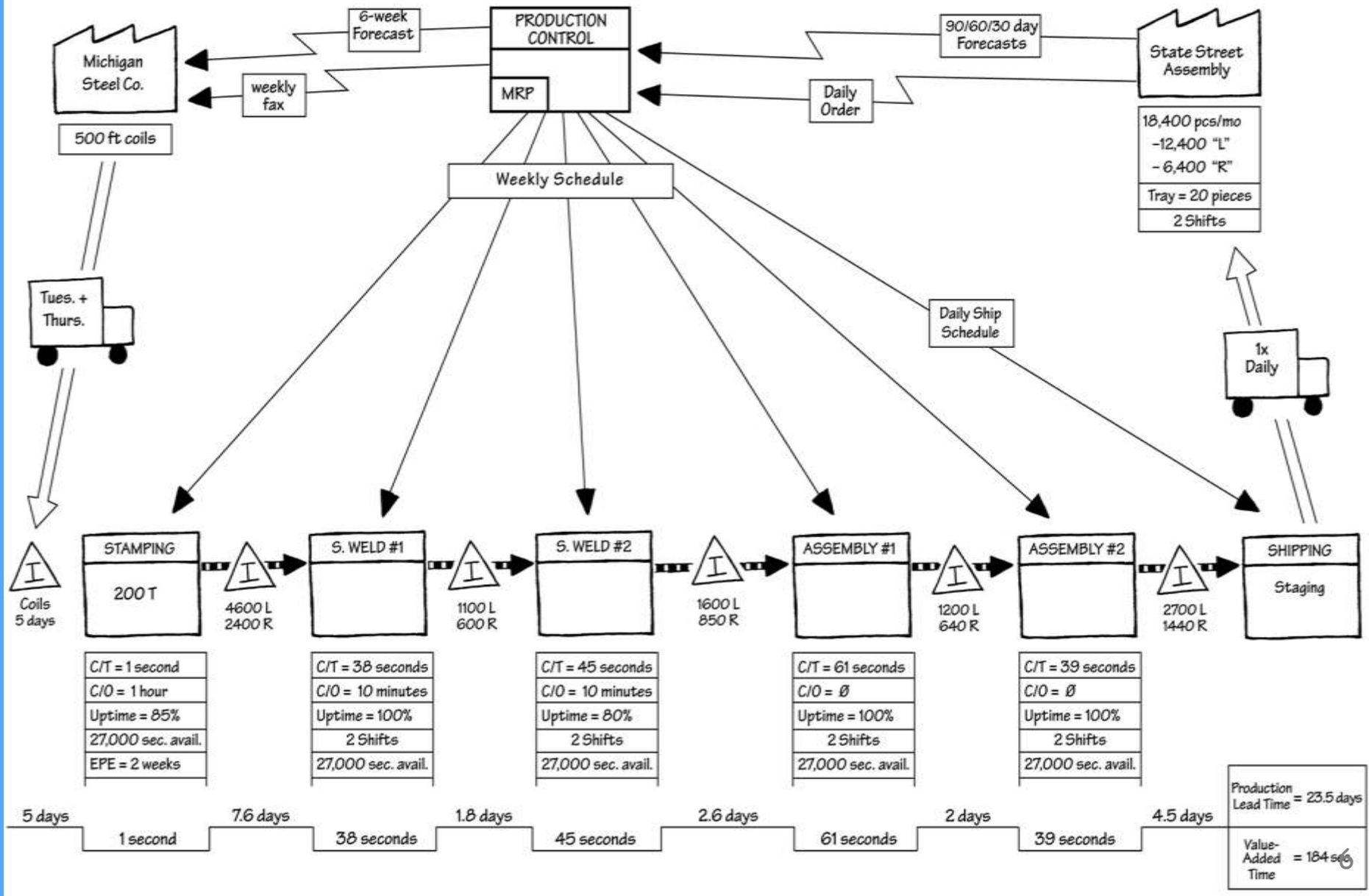
✓ Flow (through cellular layouts in process sequence)

✓ Pull (with various types of signals – kanban, etc.)

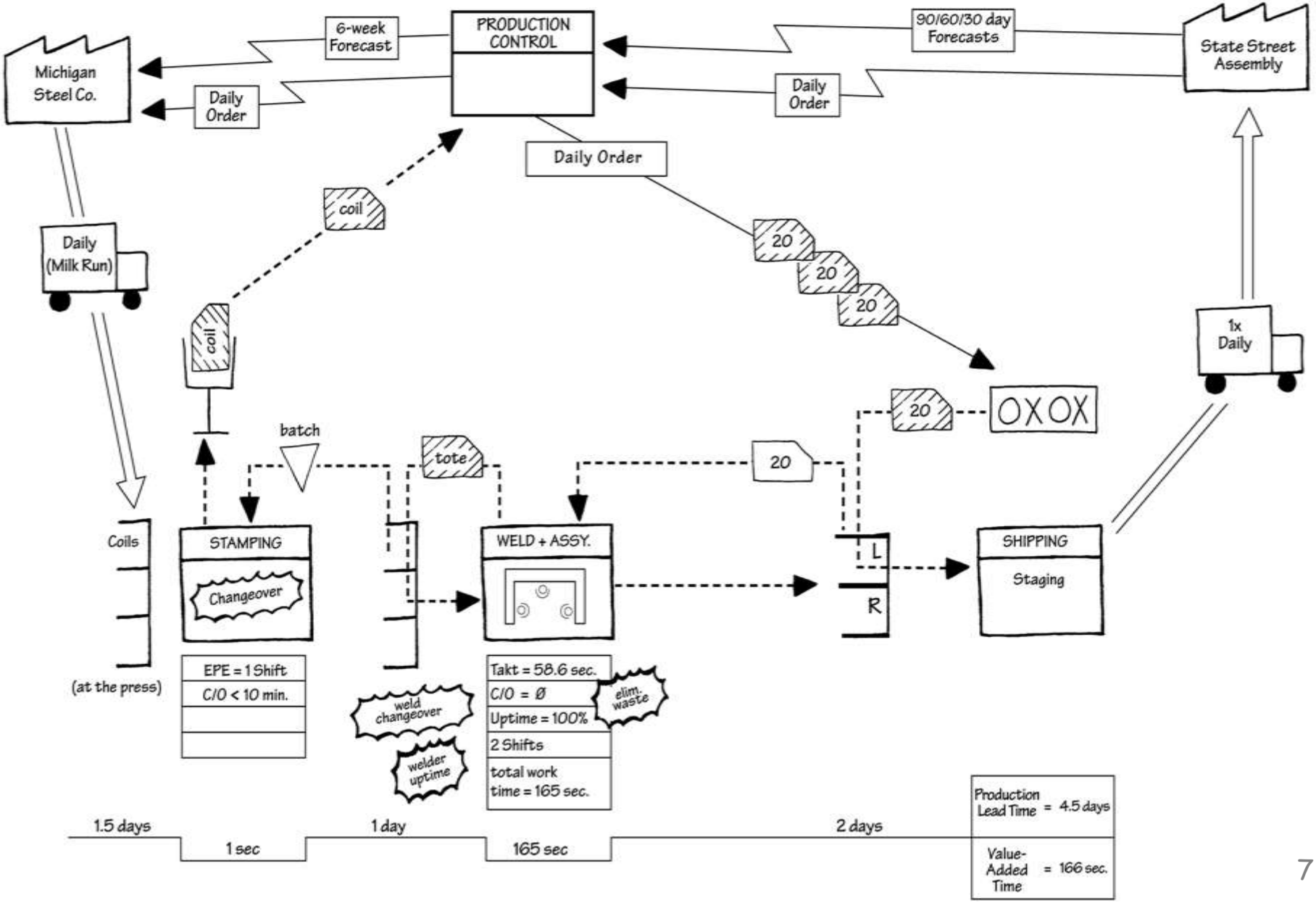
✓ 5-day (or 4-day or 3-day or…) kaizen

✓ Value stream maps!

Current-State Value Stream



Future-State Value Stream



State of Lean Today

A lot of tools.

A lot of sawing and hammering.

Very limited progress in creating sustainable lean enterprises.

What has been left out?

- A lean management system.
- Lean leadership needed to introduce and sustain a lean transformation.

The Ages of Management: Craft

We've been on a long journey:

- Starting eons ago with Craft Production:

✓ Product development by one person.

✓ Production by the master craftsman (same person.)

✓ Labor from apprentices, using flexible machines.

✓ Parts supplied by other small craftsmen.

- Worked well for simple products in low volumes.

Henry Ford

- Small, fast development team, led by Ford himself.
- Standard, low-cost product, no options.
- Interchangeable parts, every time – no fitting.
- Flow production in assembly.
- Flow production in fabrication, by locating different technologies in process sequence.
- Standard work.
- Primitive pull system.
- Remarkably “horizontal” organization.
- Brilliant initial success and brilliant prospects!

What Ford Left Out: Variety & Management

- Ford truly believed that everyone wanted the same thing.
- Loved by Fascists and Communists alike because this belief facilitated “Planning”.
- No model of management other than referring all decisions to the top. (No clear grants of authority.)
- Worked when there was only one value stream for a standard product!
- Declined steadily as markets demanded variety and company became increasingly impossible to control.

Alfred Sloan

- “A product for every purse and purpose.”
- A management system with:

✓ Clear grants of authority, for organizational units.

✓ Planning and direction from the top down.

✓ Line managers judged on results, often financial.

✓ Generalist managers, rotated frequently.

✓ Decisions made far from point of value creation, by analyzing data.

✓ Problem solving and improvements conducted by staffs and through programs.

✓ Loss of Ford’s focus on horizontal flow of value.

Eiji Toyoda

- Planning and direction from top but with multiple feedback loops; responsibility for getting problems solved through improved processes takes precedence over authority for departments and functions.
- Line managers focused on operating and improving clearly specified processes; good results emerge from good processes rather than focusing on results.
- Decisions made as close to the point of value creation as possible using direct observation; “data” into “facts.”
- Problem solving and improvement conducted mostly by line managers, in problem solving loops with superiors and subordinates.
- Remarkable horizontal focus in a vertical, functional organization!

To Progress Toward Lean Management

Every organization must address:

- **Purpose**
- **Process**
- **People**

Defining the **purpose** &

specifying the **process** for achieving the purpose

by aligning the **people** touching the process

is the central task of

lean leadership &

lean management.

Most Organizations Struggle

- **Purpose** is not clearly defined in terms of solving the customer's problems or addressing the business need.
- **Processes** creating value are not clearly specified and visible to everyone.
- **People** are not engaged in optimizing the whole value stream rather than the point they manage.

  (And they lack technical competence and a scientific method – Plan Do Check Act (PDCA) -- for improvement.)

Lean Management: Purpose

- Determine customer purpose.

  Hint: In today's world many customers want to solve a problem rather than obtain isolated goods and services.

- Address purpose by identifying product-family value streams for specific customers.
- Determine the business problem.

✓ Value stream focus makes it easier to do both.

What's A Lean Process?

Any process is series of steps which must be conducted properly in the proper sequence at the proper time to create value for some customer.

In a lean (perfect!) process:

- ✓ Value is correctly specified.
- ✓ Every step is: Valuable, capable, available, adequate, & flexible.
- ✓ The steps are linked by: Flow, pull & leveling.
- ✓ Muda, mura, & muri are eliminated!

Lean Management: Process

- Address the process problem by making someone responsible for each value stream to:

✓ Make the current state of the entire process clear to everyone, including the “purpose gap”.

✓ Propose a better future state & take responsibility for implementing it.

✓ Continuously address emerging problems, as close to the problem as possible.

✓ Collaborate to standardize processes across the organization.

Lean Management: People

- Engage people at every level by:

✓ Teaching them to see the value stream.

✓ Giving them deep technical knowledge and profound knowledge of process.

✓ Pushing responsibility for value stream management and improvement to the lowest practical level of line management.

✓ Introducing metrics which encourage horizontal thinking.

✓ Creating frequent problem solving loops between managers and subordinates.

✓ Via policy deployment, A3 analysis, and standardized work with kaizen.

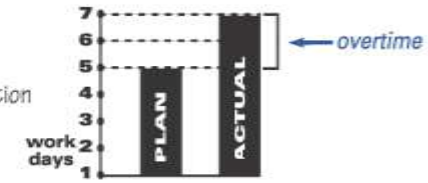
APEX TUBE COMPANY—Continuous Flow Project

Truck Fuel-Line Pacemaker Cell

1) Background/Business Case

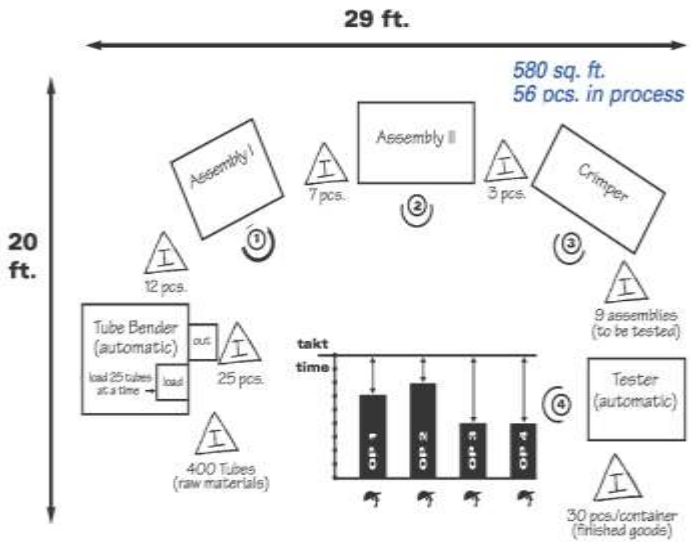
Be sure to link your plan to business objectives

Product – S/L/A Fuel Lines
Location – Anytown
Needs:
- Customer requires 5% cost reduction
- Improve productivity

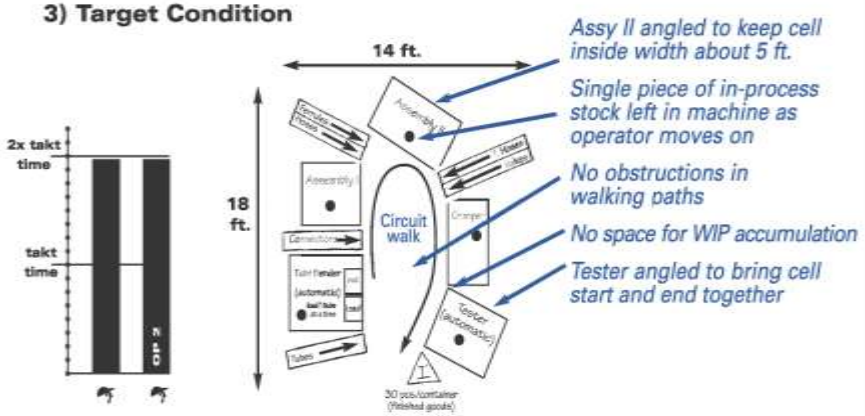


2) Initial condition

- No continuous material flow
- No people flow (operators stay at one machine)
- Unstable output
- Too much overtime
- Not working to takt time
- Too many operators for demand rate



3) Target Condition



4) Implementation

#	Task	Metric	Responsible person	Target date	March '04	April '04	May '04	June	Review	Review
1	Introduction Training									
2	Mock Up/Trial									
3	Add Auto Eject									
4	Reconfigure Cell									
5	Std. Work Training									
6	Train Material Handlers									
7	Cell Debugging									
8	Finished-Goods Supermarket									
9	Production Kanban									
10	Frequent Withdrawal									
11	Heijunka Box									

○ Proposed Start
● Actual Start
△ Proposed Completion
▲ Actual Completion
◇ Review
(Planning/Tracking)

○ On Target
△ Behind Target
× Trouble
(Evaluation)

5) Indicators

	Pcs. per Hour	WIP	Space	Cost per Unit
Current				
Goal				

Be sure to include goals so level of success can be evaluated.

Lean Management in Summary

- **Purpose** – Help customers solve problems by correctly specifying value so the enterprise can prosper.
- **Process** – Through lean processes as simple and visible as possible.
- **People** – By engaging deeply knowledgeable people in repetitive **problem solving** and **standardization**.
- We are only getting started.
- Understanding how to implement lean management by means of lean leadership is the next step for the lean movement.

The Ages of Lean

- Invention and innovation – 1937 to 1977
- Discovery – 1977 to 1990
- Diffusion beyond auto industry – 1990 to present
- Tools – 1990 to 2007

- Lean management >2007?!

We in the Lean Global Network welcome the new Spanish affiliate as we all march down this path together!