



LEAN
SOLUTIONS
ACADEMY

Lean Training
Green Belt

brought to you by:



**PATRICK
ADAMS**
CONSULTING



Yellow Belt Review



QUIZ 1:



1. What was the name of the first company to use the name 'SIX SIGMA' to describe its Quality Management System?
 - **MOTOROLA**
2. What is the First Principle of Lean production ? What is the most important thing that a Lean process must produce?
 - **VALUE** (for the customer of the process)
3. Which Japanese company is considered as being the first to use true 'Lean Production "effectively and successfully"?'
 - **TOYOTA**
4. A basic principle of Six Sigma is to always find the true original source of a defect or problem. This is called _____?
 - **ROOT CAUSE ANALYSIS**
5. A "Six Sigma Process" is often described one that produces no more than 3.4 DPMO What does DPMO stand for?
 - **DEFECTS PER MILLION OPPORTUNITES FOR DEFECTS**

QUIZ 2:



1. What is the role of a Yellow Belt on a Lean Six Sigma project?
 - **A YELLOW BELT IS A TEAM MEMBER WHO ASSISTS A GREEN OR BLACK BELT, USING THEIR KNOWLEDGE OF THE PROCESS THAT THEY CURRENTLY ARE WORKING WITHIN.**
2. What is the role of a Green Belt in an organisation ?
 - **A GREEN BELT IS A PROJECT TEAM LEADER FOR SMALL AND MEDIUM SIZED PROCESS IMPROVEMENT PROJECTS.**
3. What is the role of a Black Belt in an organisation ?
 - **A BLACK BELT IS A PROJECT TEAM LEADER FOR LARGE PROBLEM SOLVING / IMPROVEMENT PROJECTS or OVERSEES THE WORK OF GREEN BELTS FOR MULTIPLE PROJECTS. A BLACK BELT IS A FULL TIME PROBLEM SOLVER FOR THE ORGANISATION.**

QUIZ 3 :



1. Which stage of the 5S method is used to ensure that the workers have the good habits and discipline to continue the other 4S tasks?
 - **SUSTAIN**
2. In 5S the action of removing unnecessary tools, equipment and materials from the workspace is called _____.
 - **SORT**
3. Cleaning the workplace of dirt, dust and litter is called what in 5S ?
 - **SHINE**
4. Give one example of a 5S method used for **SET IN ORDER / STRAIGHTEN**
 - **SHADOW BOARDS**
 - **RACKS**
 - **COLOURED LABELS**
 - **FLOOR MARKING etc**

QUIZ 4 :



1. What Tool is used to understand what is Critical to Quality (CTQ) by Forming 3 categories: *threshold, performance, and excitement*?
 - **KANO ANALYSIS**
2. Splitting Customers into groups according to different needs or behaviours is called _____.
 - **SEGMENTING**
3. CTQs are also sometimes called CTCs or CTSs. What does CTS stand for?
 - **CRITICAL TO SATISFACTION**
4. Give one example of a method used to understand the **Voice of the Customer**?
 - **SURVEYS**
 - **FEEDBACK**
 - **FOCUS GROUPS**
 - **REPEAT SALE METRICS, etc**

QUIZ 5 :



1. What relationships are depicted by a SIPOC?
 - **Suppliers through customers**
2. Why is VOC so important at the beginning of a project?
 - **To be sure we understand the problem from the customers standpoint**
3. A process map is used to accomplish what?
 - **Identify all steps and decisions of a process in diagrammatic form**
4. What is special cause variation?
 - **Special cause variation is when any one data point is outside the control limits**
5. Kaoru Ishikawa (Fishbone Exercise) and other quality professionals focused on _____ term quality improvements over _____ term cost cutting and profit targets.
 - **Long**
 - **Short**



GREEN BELT PROJECT



Project Charter

PROJECT INFORMATION			
Project Title:	Achieve our 95% Inventory Accuracy Target	Project Initiation Date:	09/29/2022

Problem Statement: We have inventory inaccuracy in the factory resulting in achieving in an average 92% accuracy rate over 6 months (Apr 2022 - Sept 2022) after 4,378 individual part cycle counts. This inaccuracy has led to missed orders and waste looking for material.

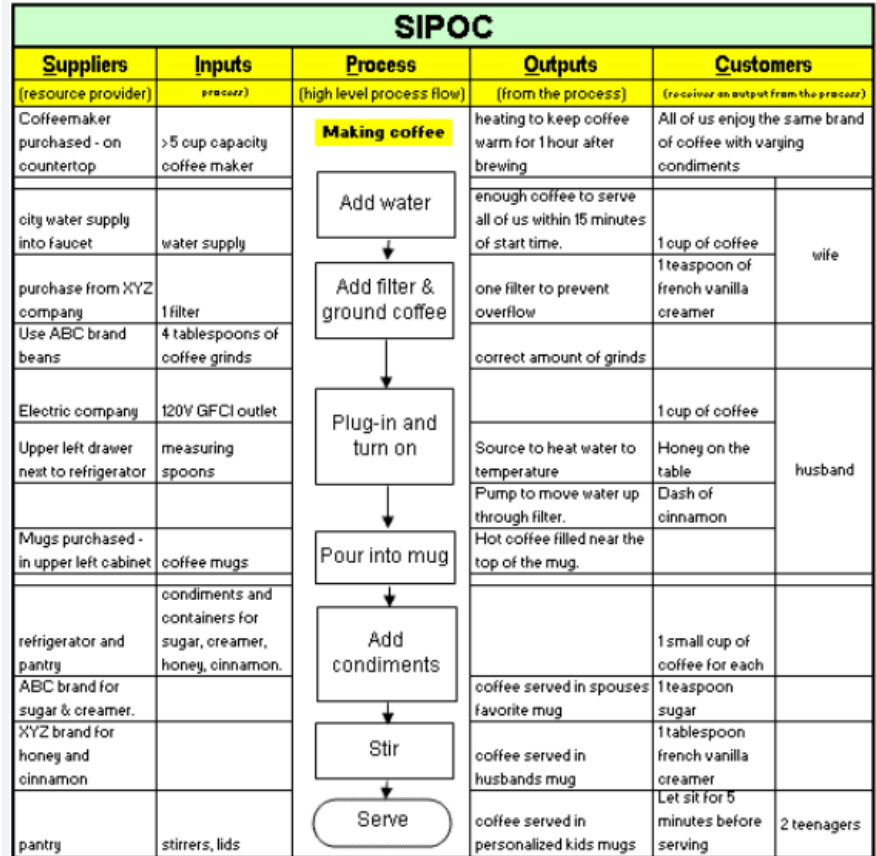
Project Goals: After determining and implementing solutions, achieve 95% inventory accuracy for 3 months after the next 3 month AB inventory cycle moves through.


In Scope (Inclusions): Inventory in the A & B inventory classification code. **Out of Scope (Exclusions):** Inventory classified as a C item.

Project Champion:	Dennis Patrick
Process Owner(s):	All that do inventory transactions and engineering changes to create BOM's.
Project Manager:	Doug Saunders
Core Team Members:	Kyle Sinke, John Pham, Tracy Helmer, Managers
Target Completion Date:	March 31, 2023

PROJECT OBJECTIVES			
Objective	Baseline	Target	
Objective #1 Achieve 95% inventory accuracy on A & B Items. Currently achieving 92%	92%	95%	
Objective #2 Create Standard Work for inventory transaction.	No Standard Work in place.	Standard Work and training.	
Objective #3			

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Process Improvement
+
Culture Improvement
+
Leadership Improvement



STRATEGIC OBJECTIVES & HOSHIN KANRI



Hoshin = Policy, Principle, Direction

Kanri = Supervision, Administration, Management

Classic Book: Akao, Y. (Ed.) (1991). *Hoshin Kanri: Policy Deployment for Successful TQM*. Productivity Press, Cambridge, MA.





“*Hoshin Kanri* is a systematic annual process led by senior executives—and preceded by Strategic Management activities—for developing, deploying, and accomplishing policies (objectives + strategies) through coordinated organization-wide activities and the rigorous application of the PDCA cycle.”

Paper: “*The Application of Policy Deployment in Indian Companies*” by Liedtke
Go to . . . www.strategicimprovementsystems.com and click on “RESEARCH”





The 7-Step Hoshin Planning Cycle



Leadership Team

Objective
What?

Reduce
Defects!

Department

Objective
What?

Reduce
Defects!

Section

Objective
What?

Reduce
Defects!

Individual

Objective
What?

Reduce
Defects!



HOSHIN PLANNING MATRIX (X-MATRIX)

<ul style="list-style-type: none"> • • • • • • • 	<ul style="list-style-type: none"> • Pilot culturally diverse idea incubators that drive ideation and disruption • Increase customer engagement in product design • Reduce customer complaints • Increase customer loyalty • Deploy Performance Excellence improvement methodologies • Increase overall market share in SW territory • Increase number of new interactive packing customer accounts • Develop new distribution channels for new digital packaging 	<ul style="list-style-type: none"> • • • • • • • 	<ul style="list-style-type: none"> • • • • • • •
<ul style="list-style-type: none"> • Achieve 25% market share of the new digital packaging service • Develop at least 10 new products with a vitality index above 65% • Grow total revenue by \$75 million • Reduce all process waste by 40% using sustainable improvement methodologies 	<p style="text-align: center;">Top-Level Improvement Priorities</p> <p style="text-align: center;">Annual Objectives</p> <p style="text-align: center;">Target to Improve</p> <p style="text-align: center;">3-5 Year Breakthrough Objectives</p>	<ul style="list-style-type: none"> • Increase active distribution channels by 6 • Achieve 20% of incremental revenue growth from new customer accounts • Increase market share in the SW region by 15% • Implement Performance Excellence in all 8 business units • Reduce customer complaint calls by 50% • Reduce PD Team turnover by 25% • Increase customer second product conversions by 25% • Increase number of customers with contracts longer than 5 years to 40% • Establish three successful incubators • Increase the number of ideas going into stage 2 (Feasibility) by 50% 	<p>Fred Burtelson (Chief Innovation Officer)</p> <p>Jim Gruber (VP of Quality)</p> <p>Dave Nies (VP of Marketing)</p> <p>Mark Miller (VP of Sales)</p> <p>Nancy Beckley (VP of Accounts)</p>
<ul style="list-style-type: none"> • • • • 	<ul style="list-style-type: none"> • Achieve world-class quality production as certified by Malcolm Baldrige standards by the end of 2017 • Create an empowered culture of collaboration resulting in a 200% increase in new products launched by the end of 2018 • Achieve 50% market share of the new digital packaging service by the end of 2018 • Grow total revenue by \$250 million with an EBITDA of 18% by the end of 2019 		<p style="text-align: center;">RESOURCES</p> <ul style="list-style-type: none"> • Primary Responsibility ○ Secondary Responsibility <p style="text-align: center;">Jack Speers (CEO)</p>





LEAN LEADERSHIP & LEADER STANDARD WORK



What is Culture?





Different Business = Different Leadership System

WHAT DOES A GOOD LEADER DO?



WE HAVE

A PROBLEM...

- 50% of people who leave their jobs do so to get away from bad leaders
- 70% of employees are not engaged at work
- A study of over 2,000 managers found that 51% are not engaged and 14% are actively disengaged.

Gallup Study: Amy Adkins



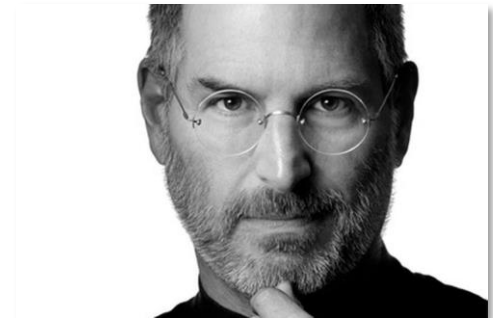
Defining Lean Leadership





WHAT IS LEADERSHIP?

Leadership is the art of motivating a group of people to act towards achieving a common goal.



LEADERSHIP VS MANAGEMENT

Leadership is not management. Leadership should compliment management, not replace it.

Management	Leadership
Planning and Budgeting	Direction Setting
Organizing and Staffing	Aligning constituencies
Controlling and problem -solving	Motivating and Inspiring

Traditional Leadership

- Leader plans
- Staff meets goals set by leader
- Leader produces metrics and feeds back when not met
- Rigid enforcement of rules and regulations
- Information controller
- Sole problem solver
- Technical expert
- Assignor of work
- Performance appraiser



Lean Leadership

- Direction setter
- Ensures team goals support vision
- Monitors and audits team's metrics
- Sets expectations
- Information conduit
- Facilitates 'root cause' analysis
- Technical resource
- Provider of forward workloads
- Appraises team performance to team goals

WHAT IS LEAN LEADERSHIP?

Lean Leaders embrace and champion continuous improvement throughout their organization.



5 LEAN LEADERSHIP ACTIONS

1. Leaders must be Teachers
2. Build Tension, Not stress
3. Eliminate Fear and Comfort
4. Lead through visible participation, not proclamation
5. Build Lean into Personal Practices

THE HEART OF A SERVANT

What is Servant Leadership?

Hard-to-Learn Characteristics

- o Calling, Empathy, Healing, Stewardship

Learnable Skills

- o Listening, Awareness, Persuasion, Foresight, Growth, Team Building



7 CHARACTERISTICS OF SUCCESSFUL COMPANY CULTURE

1. A purpose-driven company culture
2. Effective communication patterns
3. A culture of feedback
4. Embracing diversity
5. Teamwork
6. Engagement and loyalty
7. Growth and development

7 CHARACTERISTICS OF SUCCESSFUL COMPANY CULTURE

1. A purpose-driven company culture

- Shift resources to achieve goals
- Inspiration driver for engagement
- Drive performance



7 CHARACTERISTICS OF SUCCESSFUL COMPANY CULTURE

2. Effective communication patterns

- Clarity
- Courtesy
- Proactivity



7 CHARACTERISTICS OF SUCCESSFUL COMPANY CULTURE

3. A culture of feedback

- Receptive to give and receive
- Internal and external
- Any aspect of organizational life

7 CHARACTERISTICS OF SUCCESSFUL COMPANY CULTURE

4. Embracing diversity

- Tolerance and acceptance of others
- Aware about difference
- Evaluate impact of differences



7 CHARACTERISTICS OF SUCCESSFUL COMPANY CULTURE

5. Teamwork

- Mutual understanding
- Focus on team accomplishment
- Fast, better and more efficient

7 CHARACTERISTICS OF SUCCESSFUL COMPANY CULTURE

6. Engagement and loyalty

- Psychological meaningfulness
- Psychological safety
- Availability



7 CHARACTERISTICS OF SUCCESSFUL COMPANY CULTURE

7. Growth and development

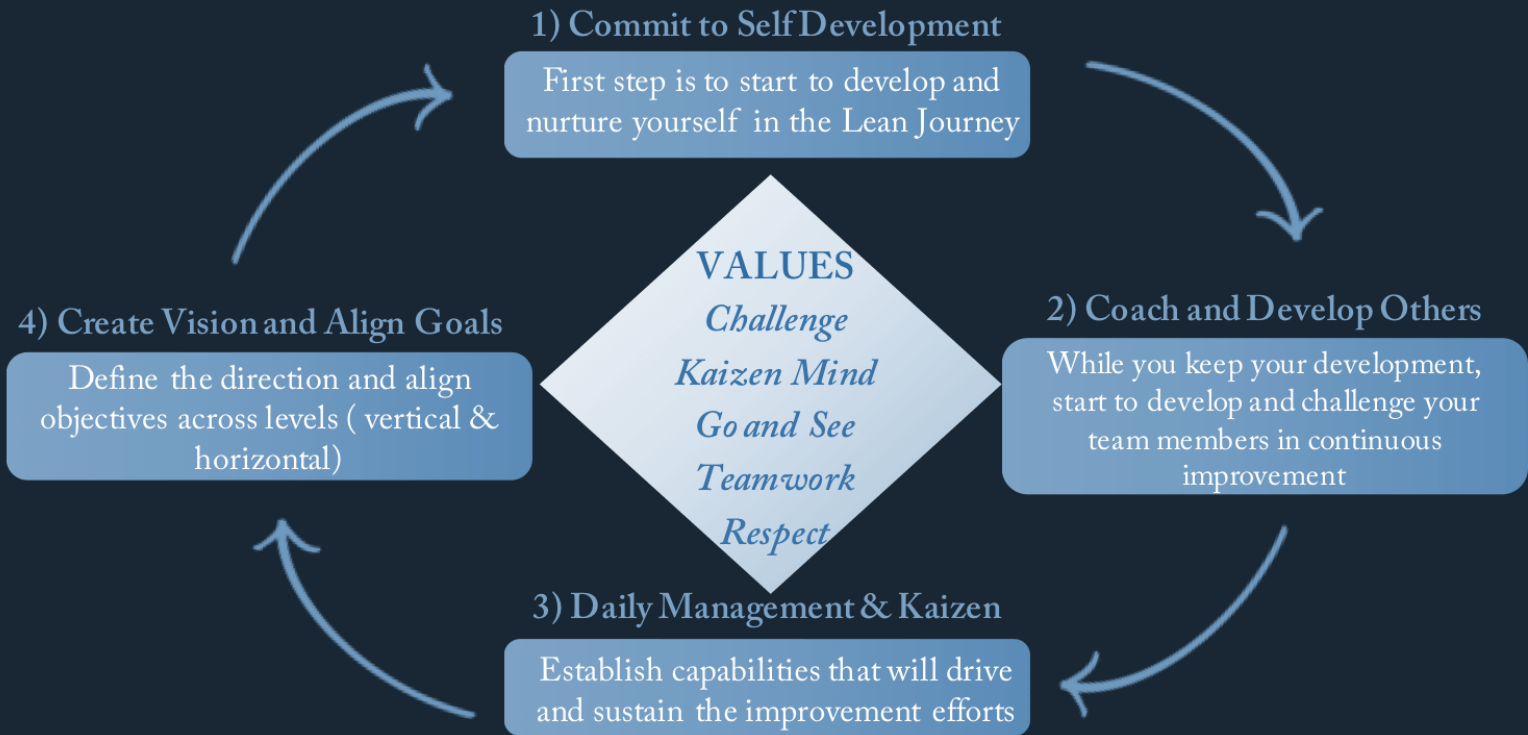
- Position-based growth
- Professional growth
- Financial growth



LEADERSHIP

REQUIREMENTS

- o The majority of people, if given leadership, respect, opportunities for satisfaction and worthwhile goals, will attempt to excel.
- o As leaders, we need to have a set of beliefs, expectations, and direction, that focuses everyone in the organization on critical objectives in an effective manner.





WHAT IS

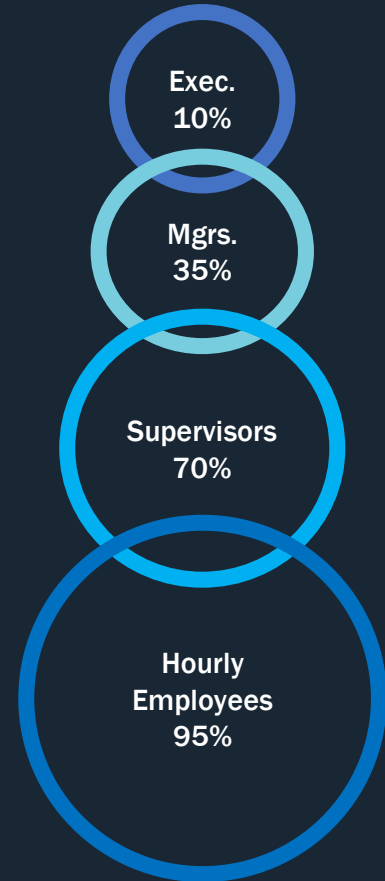
LEADER STANDARD WORK

A set of daily and weekly actions, tools, and behaviors, that leaders apply to build and sustain a continuous improvement culture.

WHO USES LEAN STANDARD WORK?

All leaders! However, it varies based on the roles and responsibilities.

ROLE	% of Work (time that should be standardized)	
Executives	10-15%	Standard work is LESS structured <ul style="list-style-type: none"> • % of time standard • Specific sequence • Specific time of day • More time for discretionary tasks
Support Department Managers	25%	
Value Stream Managers	50%	
Value Stream support staff	50%	Standard work is MORE structured <ul style="list-style-type: none"> • % of time standard • Specific sequence • Specific time of day • Less time for discretionary tasks
Team leaders	80%	
Operators (Associates)	95% +	



WHY FOLLOW LEADER STANDARD WORK?

You are creating a culture that...

- Solves problems quickly, creatively, and permanently
- Collaborate instinctively
- Make continual gains in performance
- Develops the next generation of leaders
- Deliver Superior Financial Results

LEADER STANDARD WORK MATRIX

Tasks Category	Team Leader	Supervisor	Operations Team or Plant Manager*
Tier 1	Lead	Attend 1 per day (rotate through areas responsible for)	
Tier 2	Attend	Lead	
Tier 3		Attend	Lead
Plant Board			Attend
Standard Work	<ul style="list-style-type: none"> Daily Audit Update as necessary 	<ul style="list-style-type: none"> Verify visual system up to date Audit 1 per week per area Verify standard work revision is current 	1 per week
Process Performance	Observe for abnormal - follow escalation Monitor: <ul style="list-style-type: none"> Hour by Hour boards PM completion 5S Product quality (incoming and outgoing) Frequently throughout the day	Observe for abnormal - follow escalation <ul style="list-style-type: none"> Audit logs Monitor 5S/PM Monitor hour by hour boards Daily KPI team board audit Minimum: start/End of shift	During Gemba: <ul style="list-style-type: none"> Review corrective actions / plans for top issues Discuss team board problem solving process Review training matrix and ensure plans in place Pay attention to lean waste and review plans
Gemba Walk	w/ Supervisor	<ul style="list-style-type: none"> 1 daily with team leaders 1 per week per area with Ops Mgr 	1 per week per area
Continuous Improvement	Kaizen on the line: <ul style="list-style-type: none"> solve a problem complete item from team board 	<ul style="list-style-type: none"> Follow up on member ideas CI coaching Support/lead mfg initiatives 	<ul style="list-style-type: none"> Lead strategic initiatives Lead operations CI project
Training	<ul style="list-style-type: none"> train new member maintain training matrix learn a job on the line 	<ul style="list-style-type: none"> Ensure proper training and document upkeep 	<ul style="list-style-type: none"> Support /provide training
Safety	<ul style="list-style-type: none"> Daily 2-5 minute safety discussion Safety Audit 	<ul style="list-style-type: none"> Daily 2-5 minute safety discussion Safety Audit 	<ul style="list-style-type: none"> Daily 2-5 minute safety discussion Safety Audit
LSW Review		Review Team Leader	Review Supervisor
HR	Notify team of OT	<ul style="list-style-type: none"> Staffing Assess member performance Promotion/disciplinary action 	<ul style="list-style-type: none"> Assist supervisor as required Hr activities for direct reports as required

LEADER STANDARD WORK

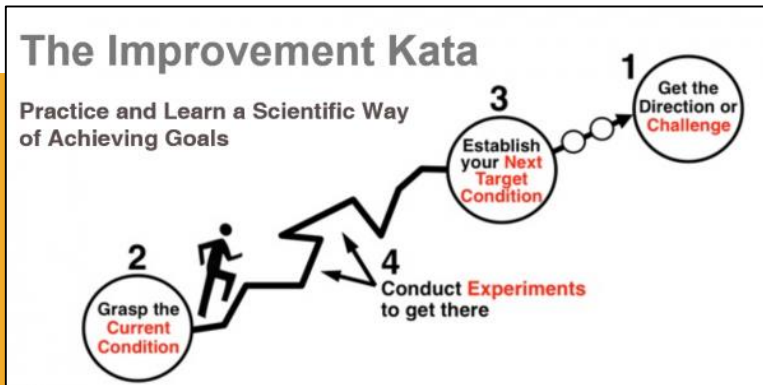
Daily Tasks	Notes:	Tasks Assignments:
<input type="checkbox"/> Tier 1 Meeting- Lead <input type="checkbox"/> Attend <input type="checkbox"/> <input type="checkbox"/> Tier 2 Meeting- Lead <input type="checkbox"/> Attend <input type="checkbox"/> <input type="checkbox"/> Tier 3 Meeting- Lead <input type="checkbox"/> Attend <input type="checkbox"/> <input type="checkbox"/> Gemba Walk Lead <input type="checkbox"/> Attend <input type="checkbox"/> <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____	Continuous Improvement: _____ Opportunities: _____ _____ _____ _____ Problems: _____ _____ _____	Self: <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____
Multiple Times a Day Tasks	_____ _____ _____ _____ Actions: _____ _____ _____	Tasks Assignments:
<input type="checkbox"/> Hour by Hour Boards <input type="checkbox"/> 5S Audit <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____	Others: <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____	

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IMPROVEMENT KATA THINKING

LEARNING OBJECTIVES



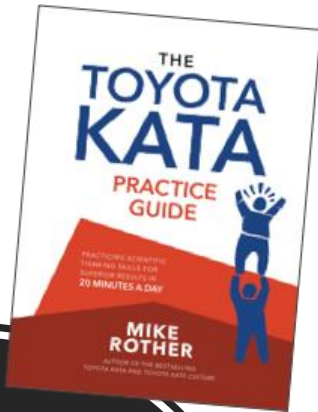
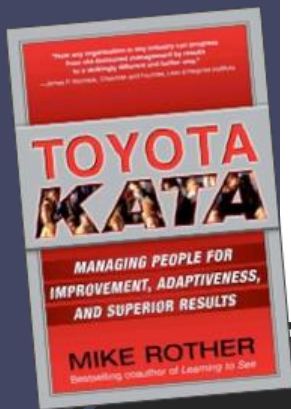
- Apply the Improvement Kata methodologies, models, and tools
- Recognize the value of the Coaching Kata methodology
- Gain a continuous improvement view of how the Toyota Improvement Kata and Coaching Kata can be used



LESSON 1

An Introduction to Kata





The Improvement Kata Pattern

EXCERPT FROM *TOYOTA KATA*

There are perhaps only three things we can and need to know with certainty: where we are, where we want to be, and by what *means* we should maneuver the unclear territory between here and there. And the rest is supposed to be somewhat unclear, because we cannot see into the future! The way from where we are to where we want to be next is a gray zone full of unforeseeable obstacles, problems, and issues that we can only discover along the way. The best we can do is to know the approach, the means, we can utilize for dealing with the unclear path to a new desired condition, not what the content and steps of our actions—the solutions—will be.

—*Toyota Kata* (2009), page 8

By Mike Rother

QUICK QUESTION

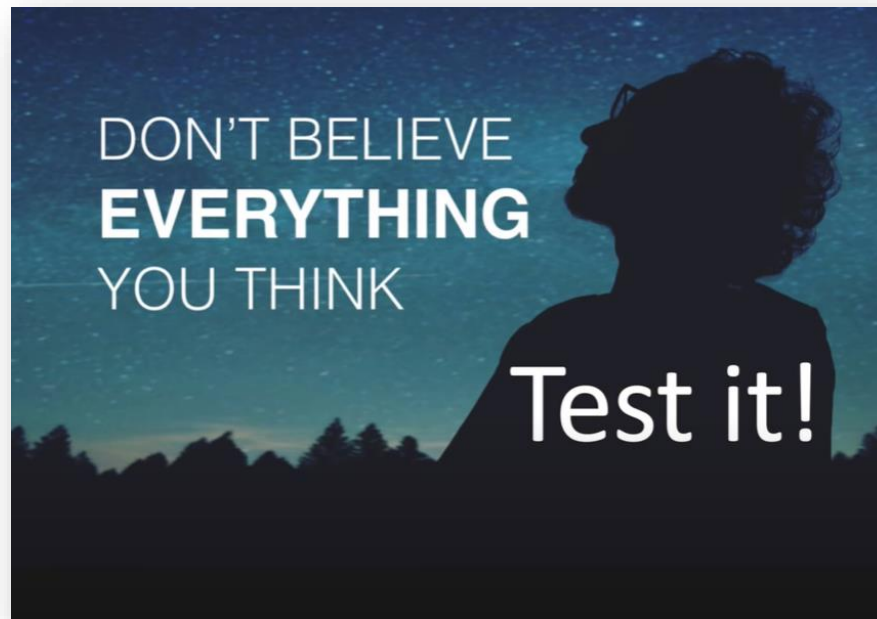
If you're running a race and you pass the person in second place, what place are you in?

QUICK QUESTION

YOU'RE IN SECOND PLACE!



QUICK QUESTION





WHAT IS TOYOTA KATA ABOUT?

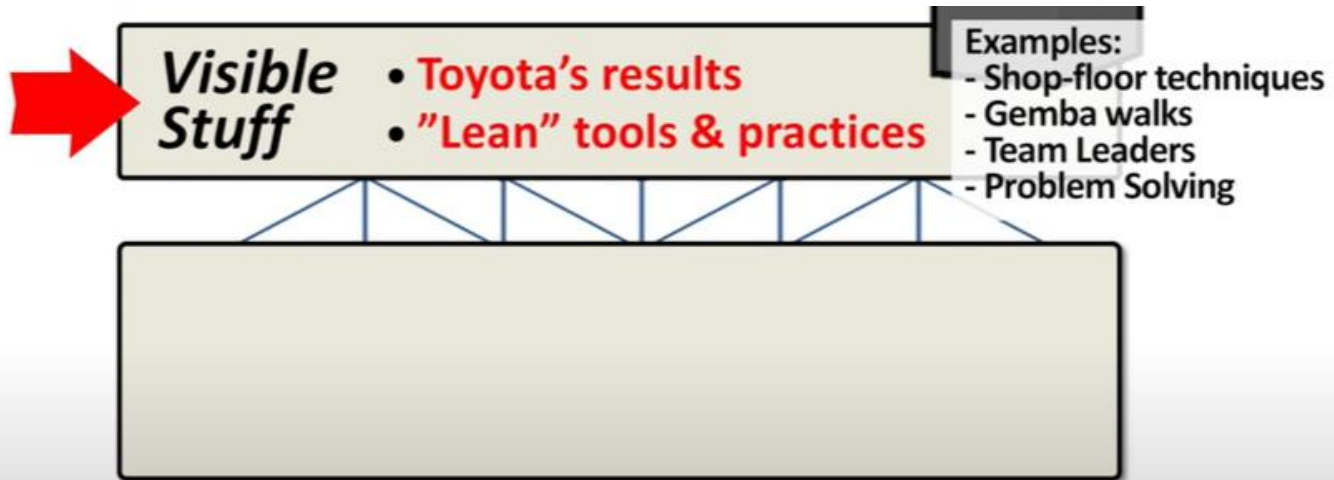
- A way of working, and of working together.
- Scientific thinking as an ingredient that makes some teams and organizations particularly effective. A 21st Century skill.
- Thinking - and culture? - that you can develop through practice.

**2003-2009 WE STUDIED TOYOTA'S
MANAGEMENT APPROACH**



HERE'S WHAT

WE FOUND



HERE'S WHAT

WE FOUND

**Visible
Stuff**

- Toyota's results
- "Lean" tools & practices

**Less
Visible
Stuff**


- 1) **A systematic, scientific way of thinking & acting**
- 2) **Managers teaching their people this way of thinking**

TK is
about
this



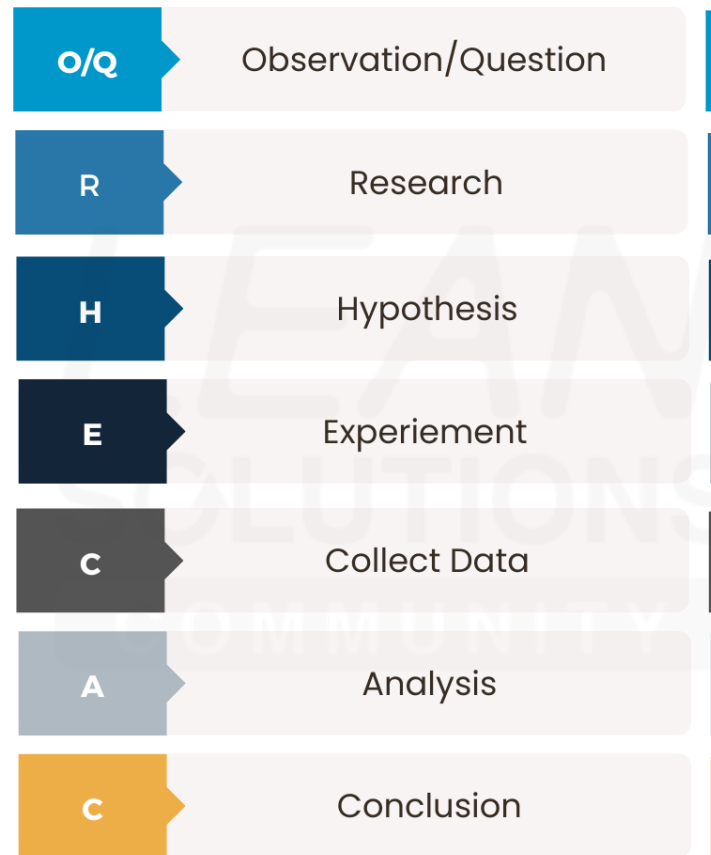
WHAT IS THE PURPOSE OF TOYOTA KATA?

- Engage staff in practicing daily continuous improvement
- Provide staff with a routine to enhance coaching skills and develop habits
- Equip people with a pattern and a mindset that is discovery oriented (rooted in scientific thinking)
- Develop behaviors within the organization that leverage the philosophy of continuous improvement to achieve operational excellence



Scientific Thinking Everyday
A life skill anyone can learn

SCIENTIFIC METHOD



Scientific Thinking for EVERYONE



SCIENTIFIC THINKING

Scientific thinking is a routine of intentional coordination between what we think will happen (theory), what actually happens (evidence), and adjusting based on what we learn from the difference.

2.

STARTER KATA

*Structured routines
for beginners
to practice
fundamentals*

3.

COACHING

*Corrective feedback
to ensure the Learner
practices the right
patterns*



1.

FREQUENT PRACTICE

A little every day

4.

MASTERY

*Growing self
"I'm getting better at this"*

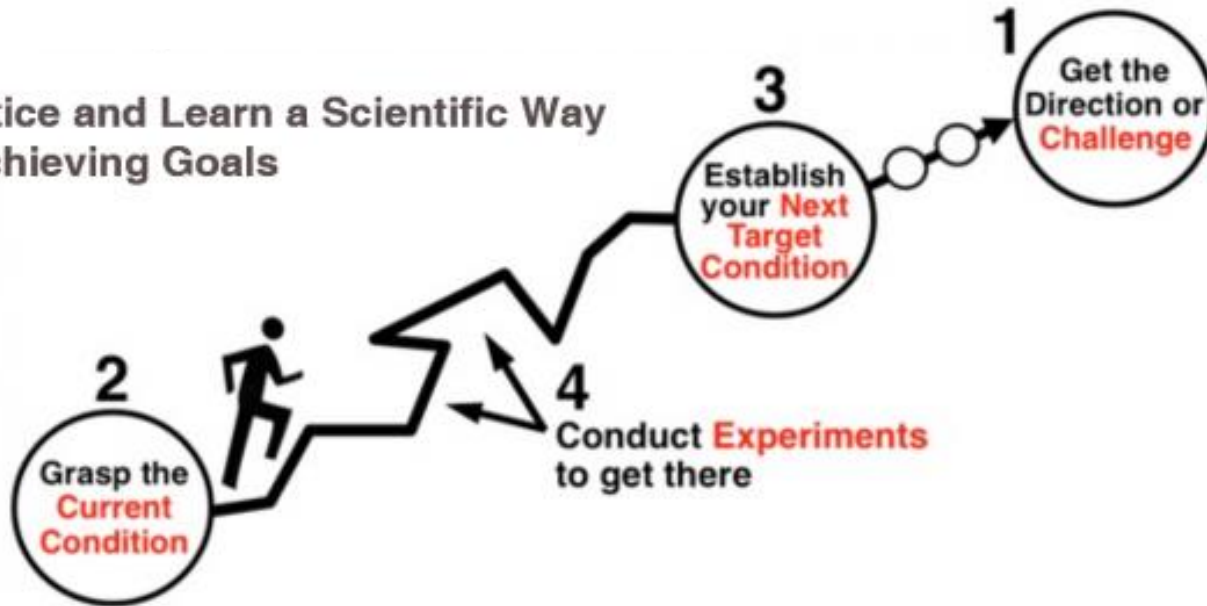


THIS IS WHAT YOU WANT TO FEEL

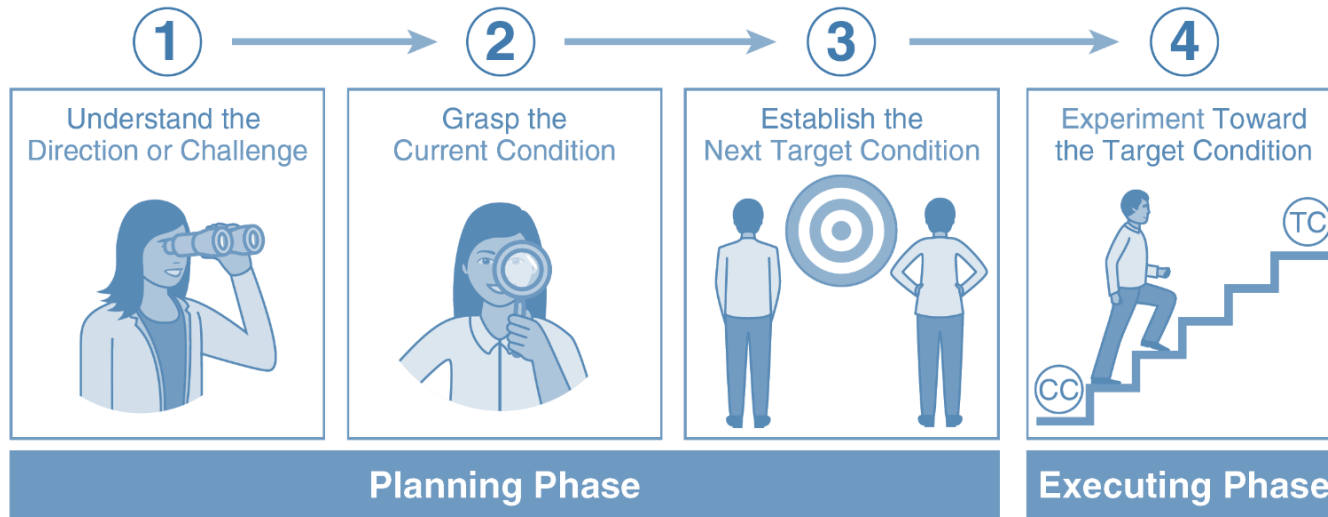
- Awkward
- Slow
- Unnatural
- Stiff
- Uncomfortable
- It Feels Wrong
- Difficult
- Really Had to Think

THE IMPROVEMENT KATA PATTERN

Practice and Learn a Scientific Way
of Achieving Goals

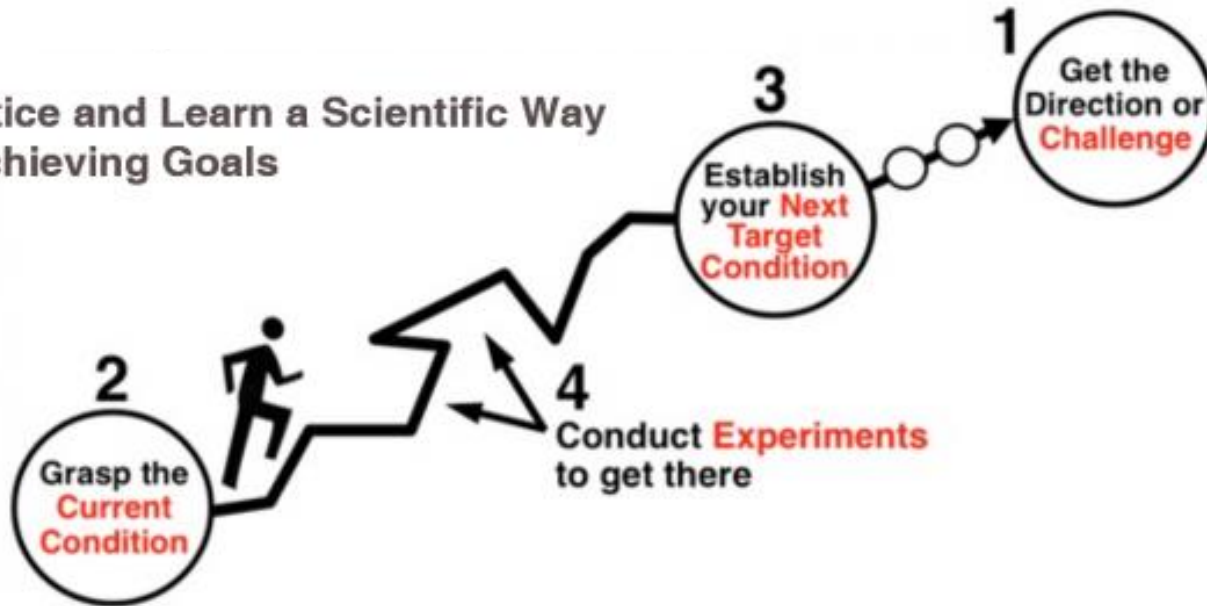


THE IMPROVEMENT KATA PATTERN

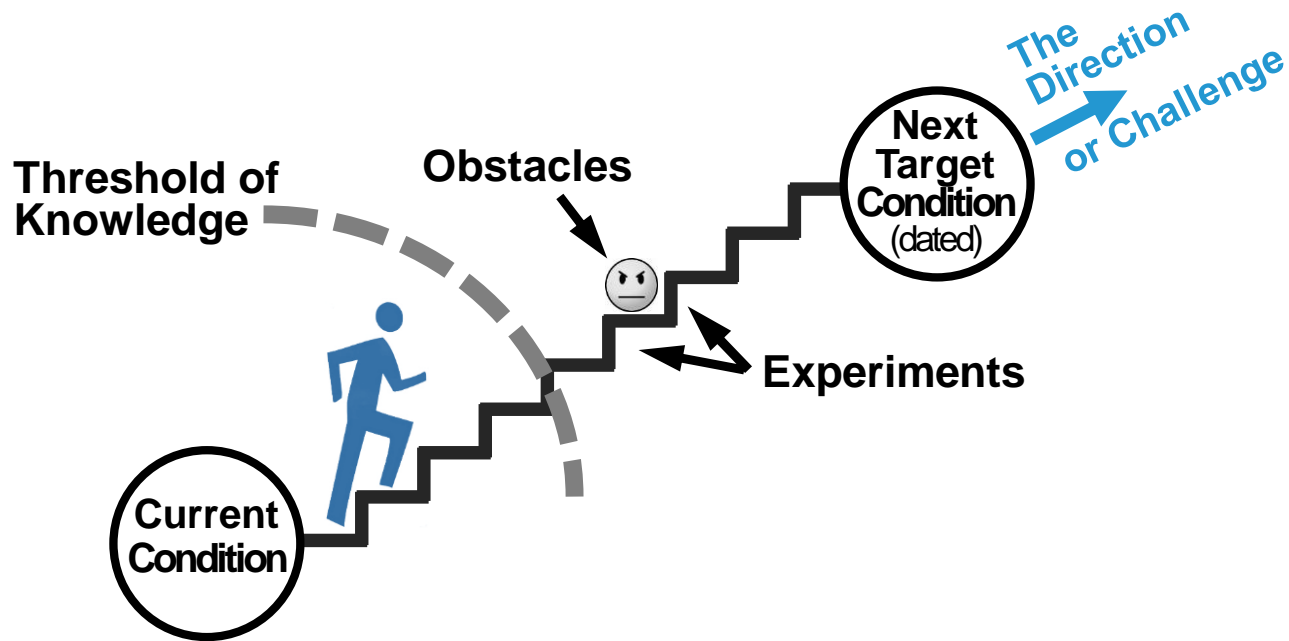


THE IMPROVEMENT KATA PATTERN

Practice and Learn a Scientific Way
of Achieving Goals

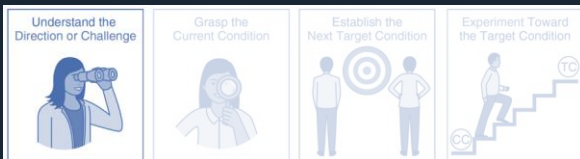


THE IMPROVEMENT KATA PATTERN



UNDERSTANDING THE CHALLENGE

- Don't Need to Know How You Will Arrive at The Finish Line
- Gives us a Sense of Direction



Coach/Learner relationships

Organization Level



Value Stream Level



Process Level

Understand the Direction or Challenge (from level above)

Grasp the Current Condition

Establish the Next Target Condition

Experiment Toward the Target Condition

(Organization's vision and strategic objectives)

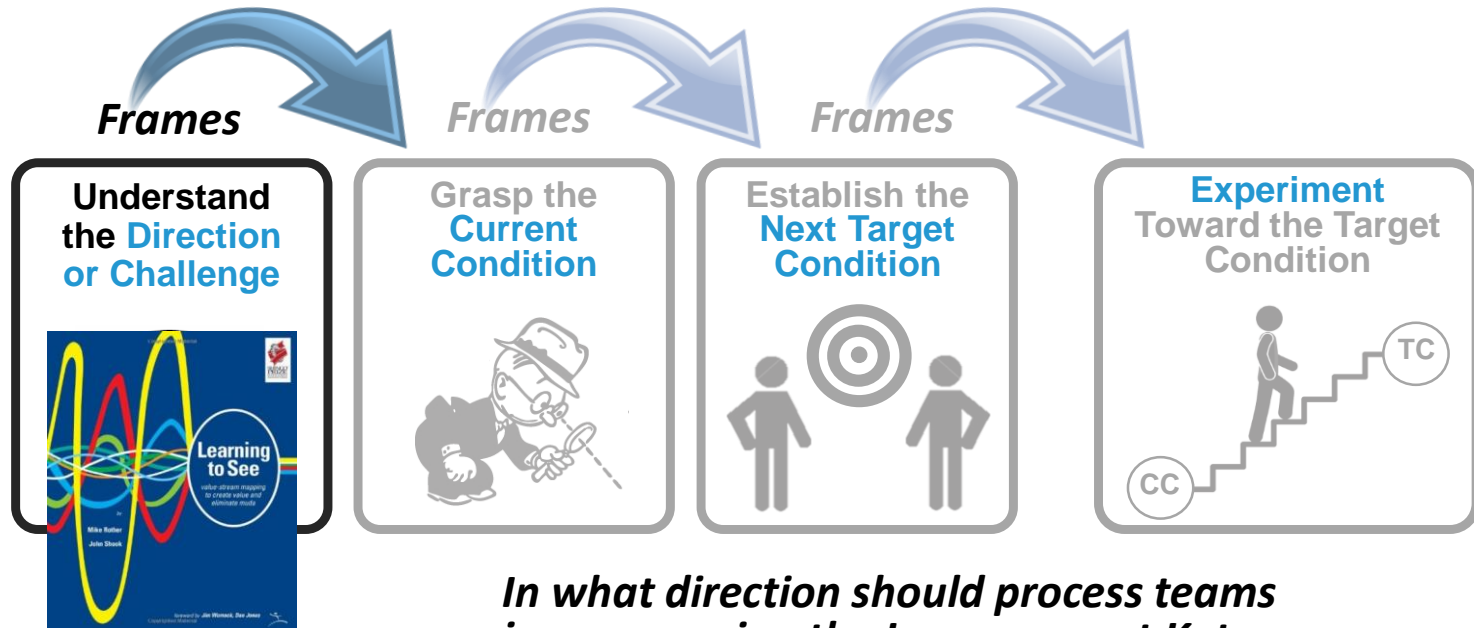
Longer-Cycle Experiments

Current State Value Stream Mapping

Future State Value Stream Mapping

Short-Cycle Experiments





VSM Here

In what direction should process teams improve, using the Improvement Kata pattern?





LESSON 2

Where Are You Going?





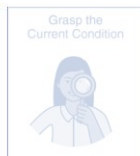
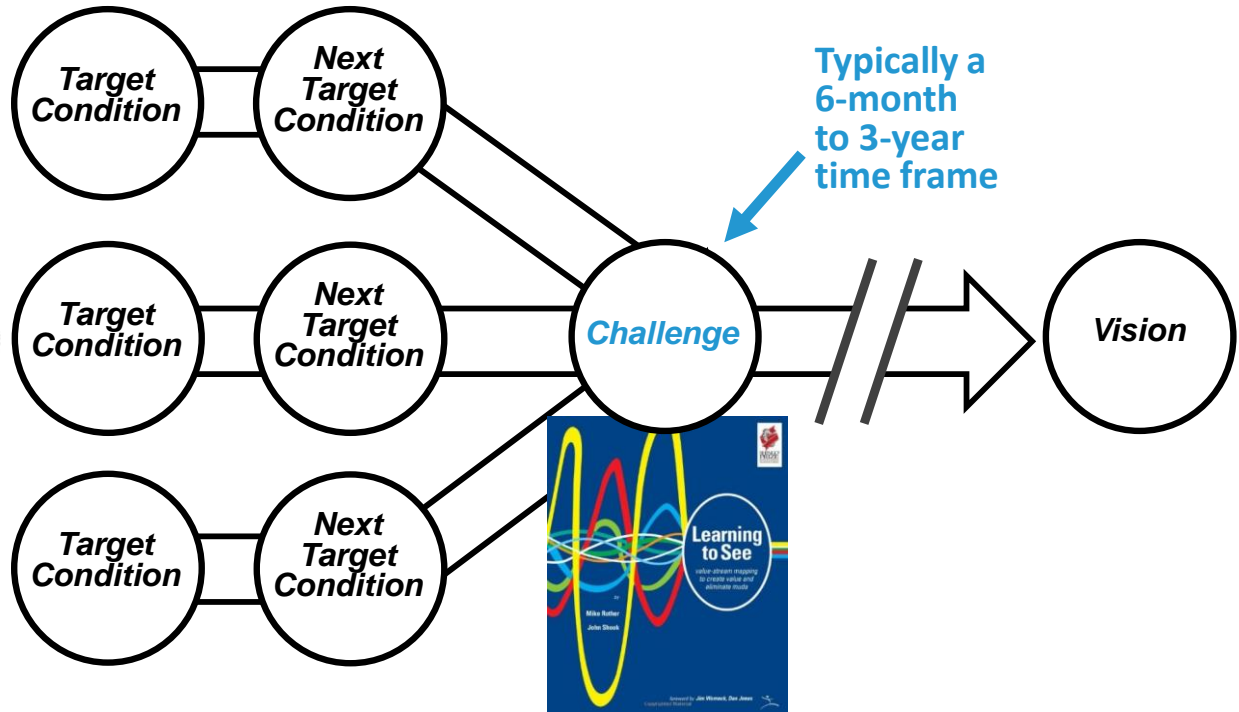
Process Team A



Process Team B



Process Team C



Scientific Thinking for EVERYONE



THE LEARNERS

STORYBOARD



Focus Process: Lab		Challenge: Done in 45
Target Condition Achieve by: _____	Current Condition	Experimenting Record
		Obstacles Parking Lot

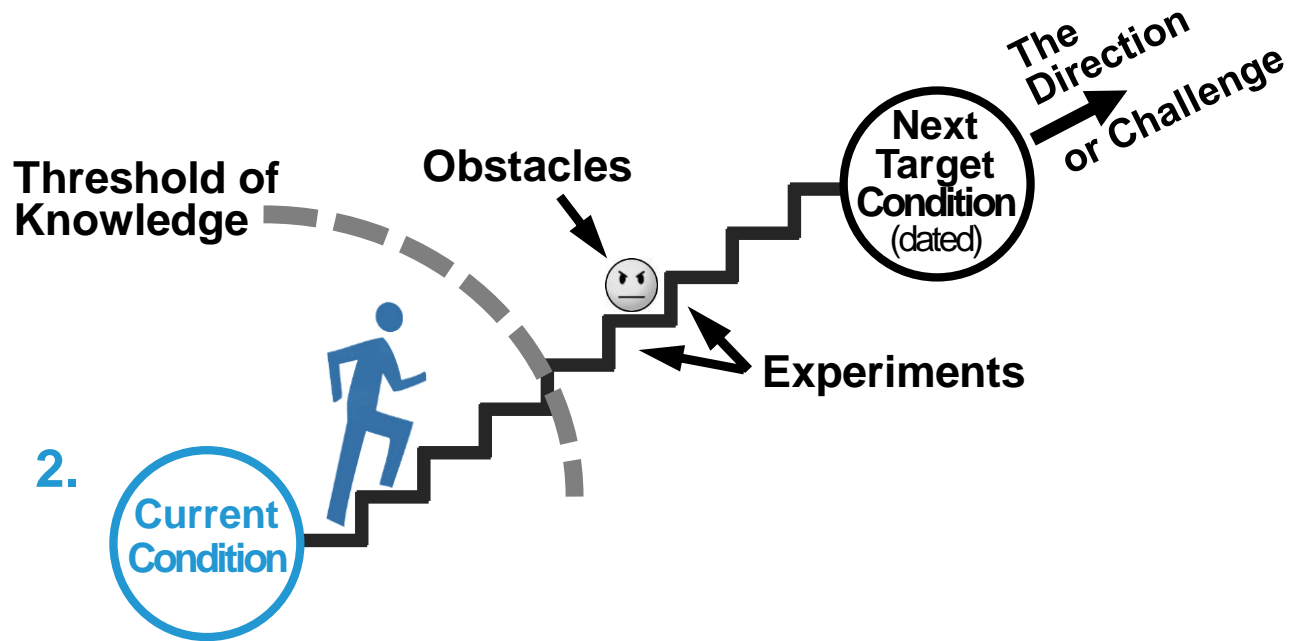


LESSON 2

Grasp the Current Condition



THE IMPROVEMENT KATA PATTERN



PROCESS ANALYSIS

1

GRAPH PROCESS OUTCOME PERFORMANCE

How is the process performing over time?

2

CALCULATE THE CUSTOMER DEMAND RATE AND PLANNED CYCLE TIME

How frequently should the process do what it does?

3

STUDY THE PROCESS'S OPERATING PATTERNS

- Draw a block diagram of the process steps and sequence.
- Time exit cycles and draw run charts, to make variation visible.
- Record your observations about the current operating patterns.

4

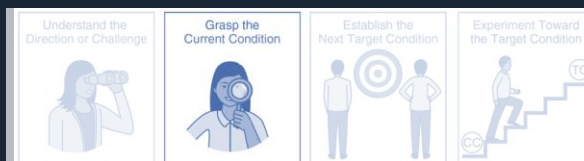
CHECK EQUIPMENT CAPACITY

Are there any equipment constraints? What are they?
(This step is only for processes that include automated equipment.)

5

CALCULATE THE CORE WORK CONTENT

How many operators would be necessary
if the process had no variation?

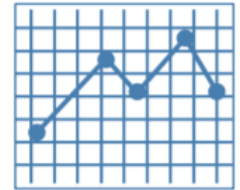


PROCESS ANALYSIS

1

GRAPH PROCESS OUTCOME PERFORMANCE

How is the process performing over time?

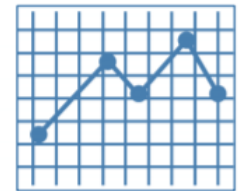


PROCESS ANALYSIS

2

CALCULATE THE CUSTOMER DEMAND RATE AND PLANNED CYCLE TIME

How frequently should the process do what it does?



Understand the Direction or Challenge



Grasp the Current Condition



Establish the Next Target Condition



Experiment Toward the Target Condition

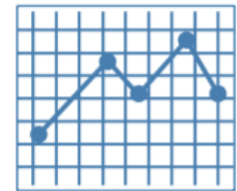


PROCESS ANALYSIS

3

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- Time exit cycles and draw run charts, to make variation visible.
- Record your observations about the current operating patterns.

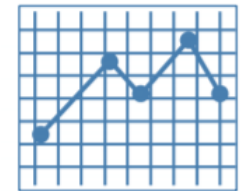


PROCESS ANALYSIS

4

CHECK EQUIPMENT CAPACITY

Are there any equipment constraints? What are they?
(This step is only for processes that include automated equipment.)

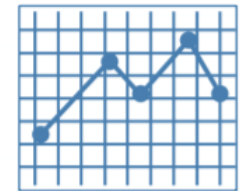


PROCESS ANALYSIS

5

CALCULATE THE CORE WORK CONTENT

How many operators would be necessary if the process had no variation?



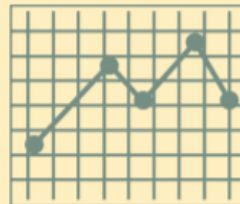
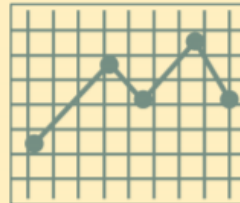
Focus Process: Lab

Challenge: Done in 45

Target Condition
Achieve by: _____

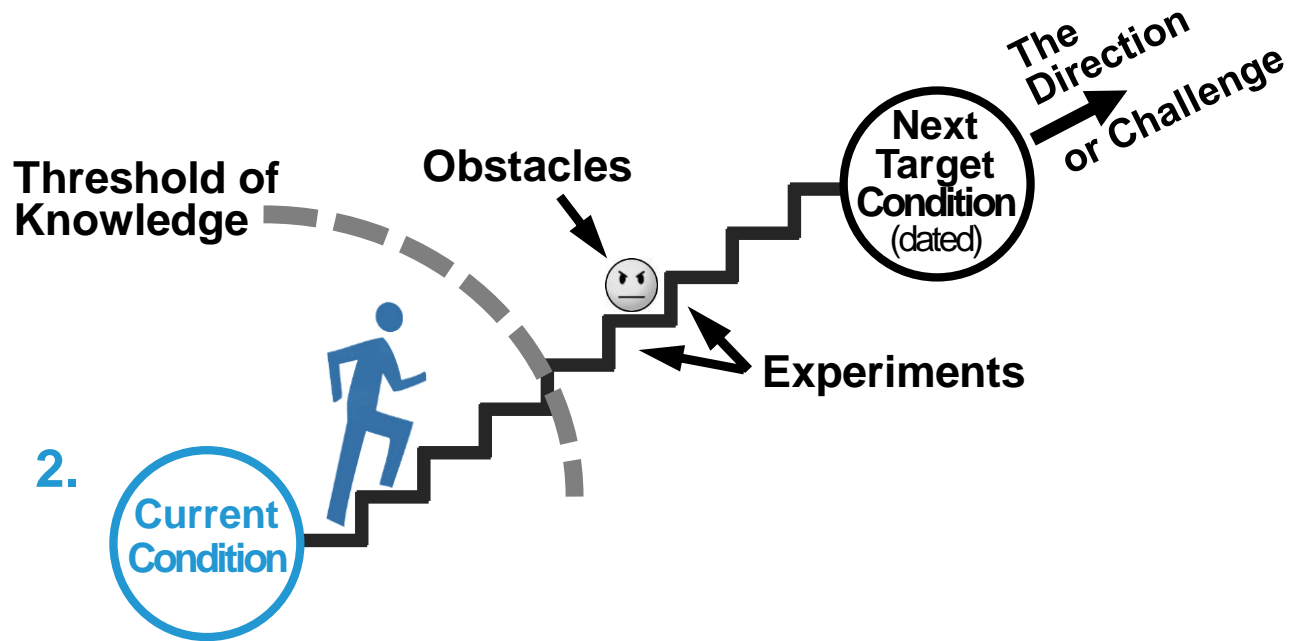
Current
Condition

Experimenting
Record



Obstacles Parking Lot

THE IMPROVEMENT KATA PATTERN



QUIZ 6:



1. What is necessary for world class 'operational excellence'?
 - **Process Improvement + Culture Improvement + Leadership Improvement**
2. What is the first step in strategic planning (Hoshin Kanri) for an organization?
 - **Establish and agree on the Mission, Vision, and Goals**
3. What are the four parts of Dr. Jeff Likers Leadership Development Model?
 - **First, Commit to Self-development. Second, Coach and Develop others. Third, Daily Management and Kaizen. Fourth, Create Vision and Align Goals.**
4. What are the four steps to Toyota Kata?
 - **1. Get the Direction 2. Grasp the Current Condition 3. Establish your Next Target Condition 4. Conduct Experiments to Get There**
5. A Kanban is used as a signal for movement of raw materials. In which direction does a Kanban usually move?
 - **It moves to the supplier of the materials, parts, or finished goods**



VALUE STREAM MAPPING

DEEPER DIVE!



INTRODUCTION

Definition: All the actions (both value added and non-value added) currently required to bring a product from raw material to customer.

- Shows the “Big Picture”.
- Documents the path from customer to supplier and back.



WHY IS THIS

AN ESSENTIAL TOOL?

- Helps you “see” the flow
- Identify the waste and its source
- Provides a common language
- Decisions about the flow become apparent
- Linkage between information flow and material flow

REDUCE LEAD TIME

- Lead time is measured from the point where flow is initiated or triggered in a process until the product or service reaches the customer
- The aim is to reduce this timeframe by only producing in response to a pull from the customer (or the next process as customer) and eliminating the things that waste time and resources.
- LT reduction is often accomplished by eliminating queue times between processes



“All we’re trying to do is shorten the time line...”

Taiichi Ohno

CURRENT STATE VS MAP STEPS

- **Step 1:** Identify customer requirements and calculate takt time
 - Our customer is sometimes internal or external
 - Our customer is also the shareholder
- **Step 2:** (DATA BLOCKS) Identify Main Processes In Order
 - Each one will be different and unique to the area you are working with.
 - A data block is created when a person or area passes a product or service to the next step.

CURRENT STATE VS MAP STEPS

- **Step 3:** Add arrows for the Flow of Information.
 - Straight arrows
 - Right Angles (NO diagonals)
 - Information flow arrows
- **Step 4:** Walk the Value Stream: Add inventory / delay queues. Note movement and inventory
 - What will be considered the WIP? What is considered inventory?
 - Inventory triangles should be noted between process blocks.
 - Stay customer centric here. A customer doesn't care if you have a price on a line item if they are waiting for a package...

CURRENT STATE VS MAP STEPS

- **Step 5:** Walk the Value Stream - Populate the Data Boxes with Metrics
 - Identify Key Performance Indicators for the Value Stream.
 - For today => See Data Box
- **Step 6:** Summarize Value Stream Metrics - Calculate Lead Time Ladder
 - Lead time complete = lead time PLUS Inventory

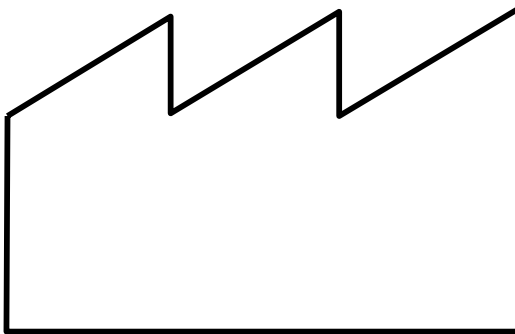


DATA INTEGRITY

There are four scenarios for data collection.

- Data exists
- Data can be gathered through observation of work
- Data can be collected through simulation of activities
- If you cannot observe or simulate the activity you may have to make an educated “estimate”

CREATING THE CURRENT STATE VALUE STREAM MAP



Always Start With the Customer

- What capability /service do you provide?
- What are the boundaries of your map?
- What is the demand profile?

TAKT TIME



Takt Time =
$$\frac{\text{Time Available / Period}}{\text{Customer Demand / Period}}$$

Takt Time – The available production time divided by customer demand.

The first step in Standard Work development is understanding the customer requirements.

- Defining the “right goods or services”, is done in the design and development process.
- The steps to transform the raw material or data to the customer defined value are captured as the work elements.
- To provide goods and services “in the right quantity, at the right time”, customer demand (takt time) must be understood.

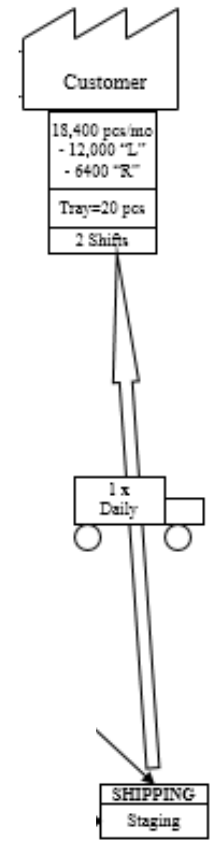
TAKT TIME EXAMPLE

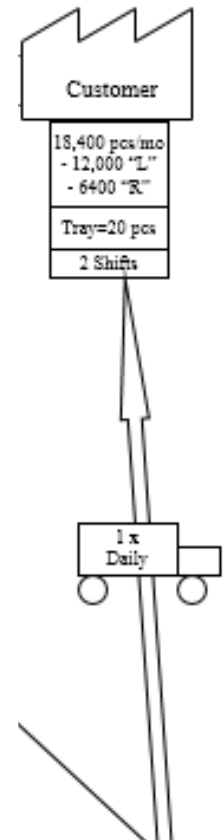
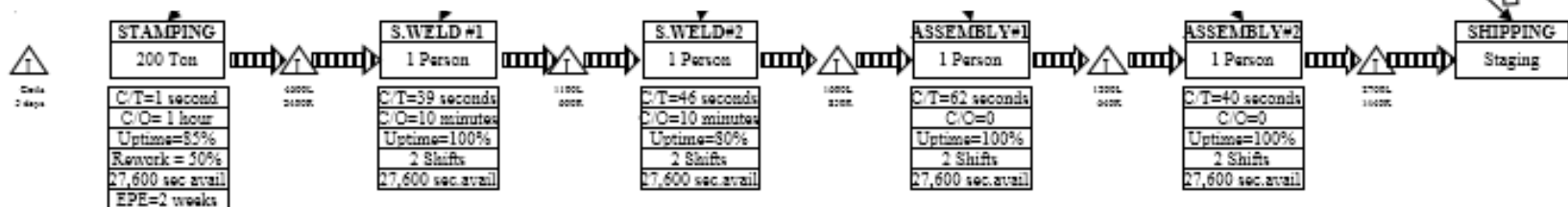
Takt Time = Demand Rate

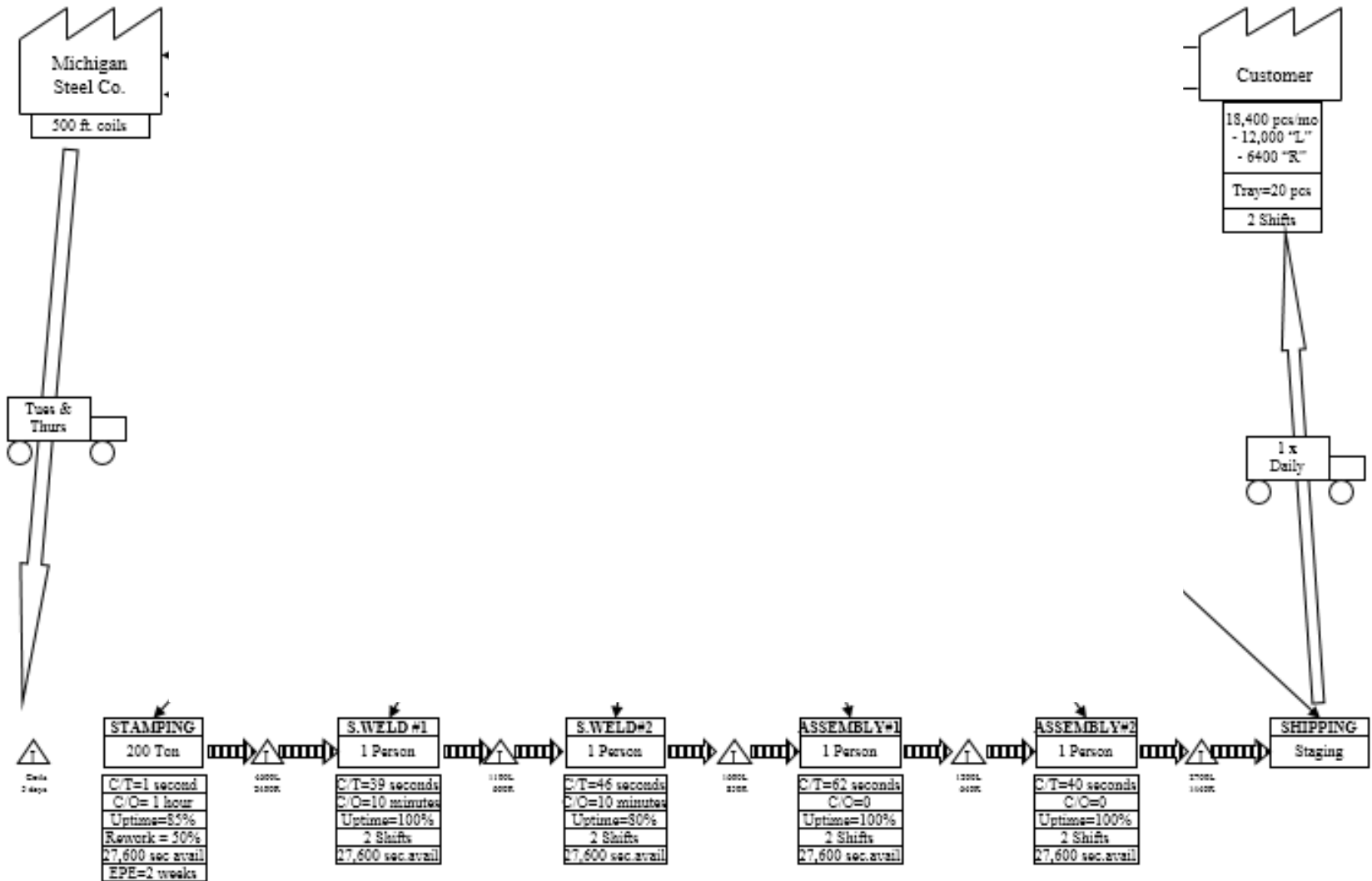
- Synchronizes pace of processing to match pace of customer need.

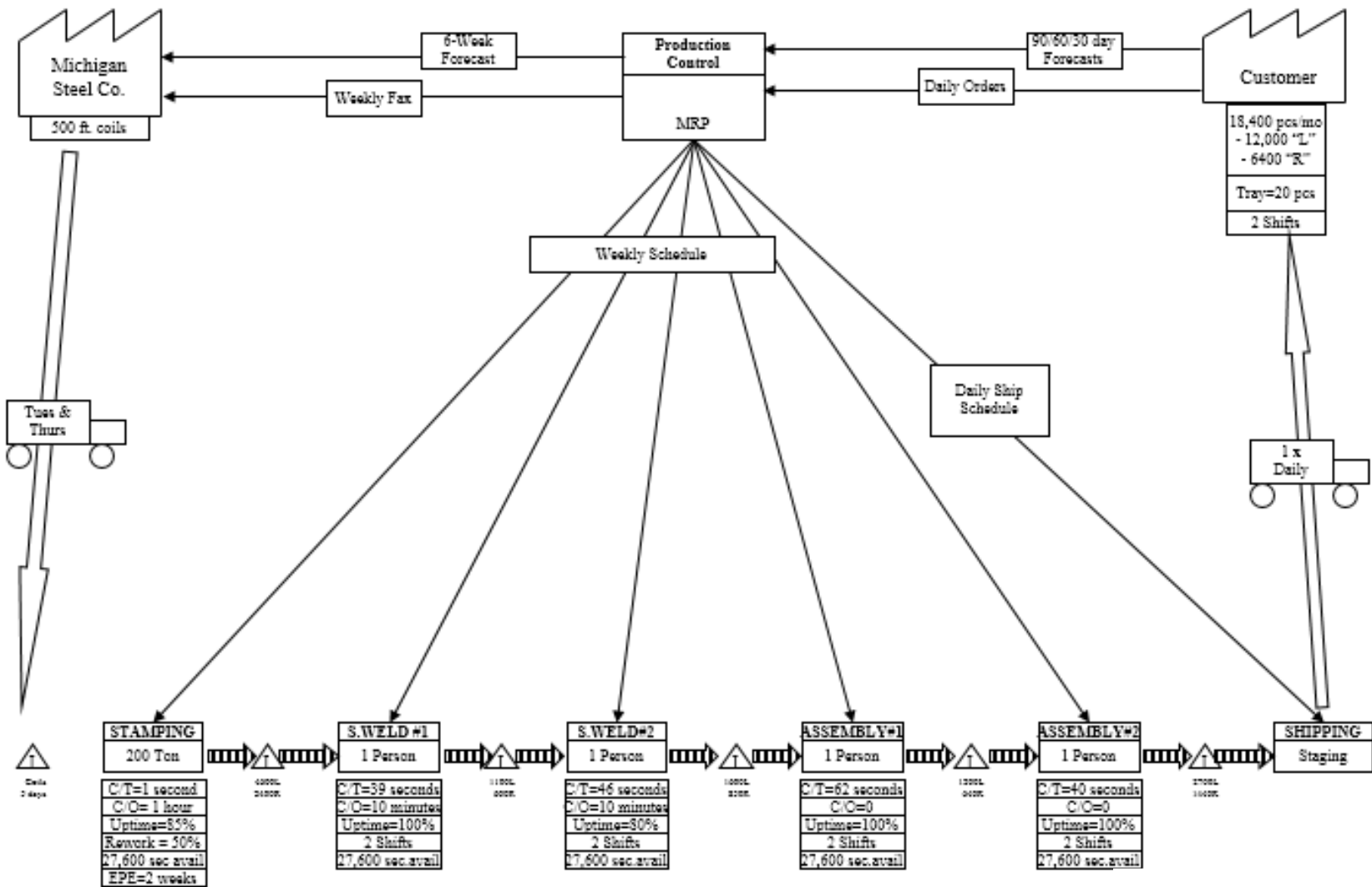
$$\begin{aligned} \text{Takt Time} &= \frac{\text{Effective working time per time period}}{\text{Customer requirement during the time period}} \\ &= \frac{460 \text{ minutes / day}}{46 \text{ quotes}} = 10 \text{ minutes per quote} \end{aligned}$$

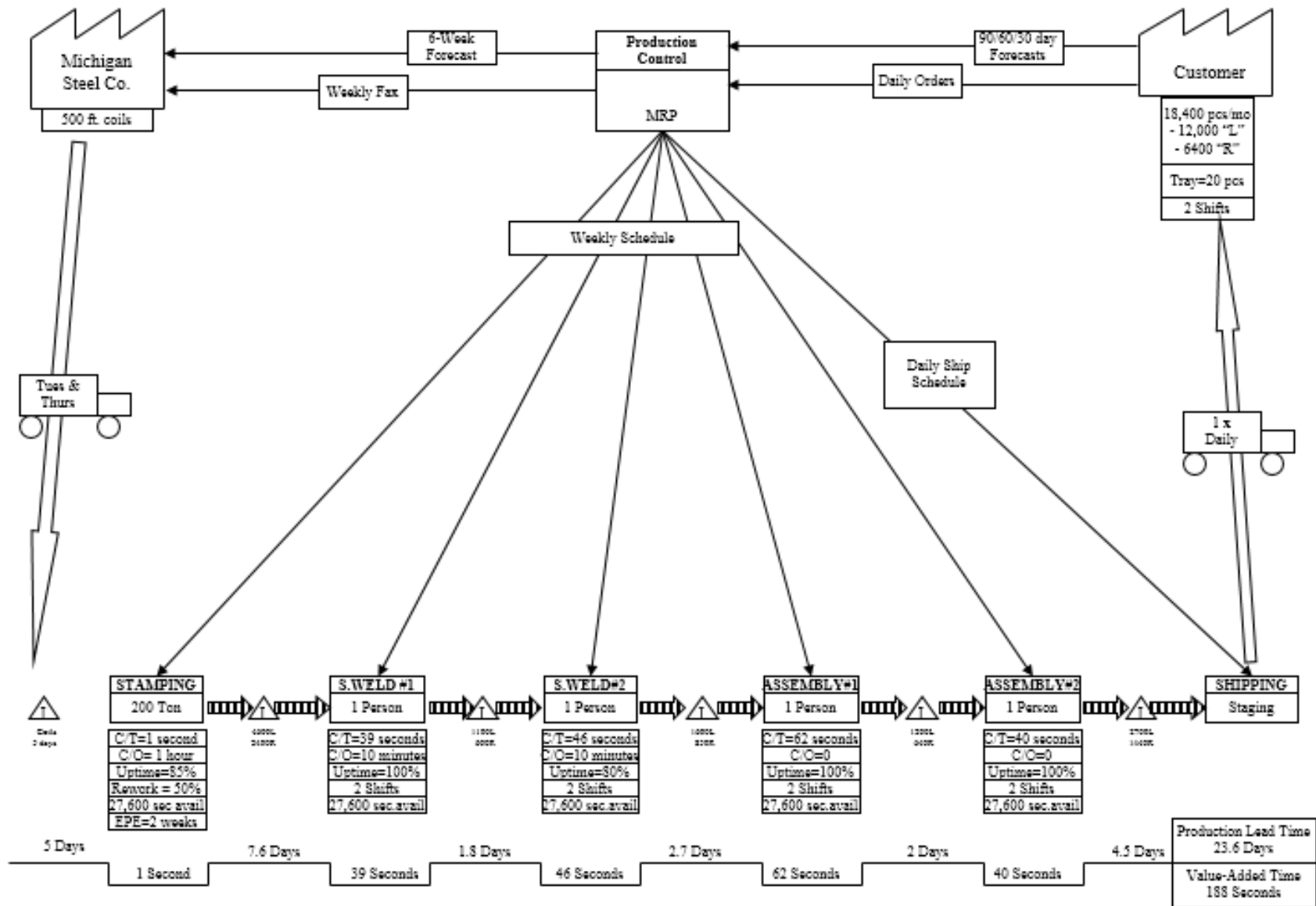
Ideally, one quote every 10 minutes must be processed



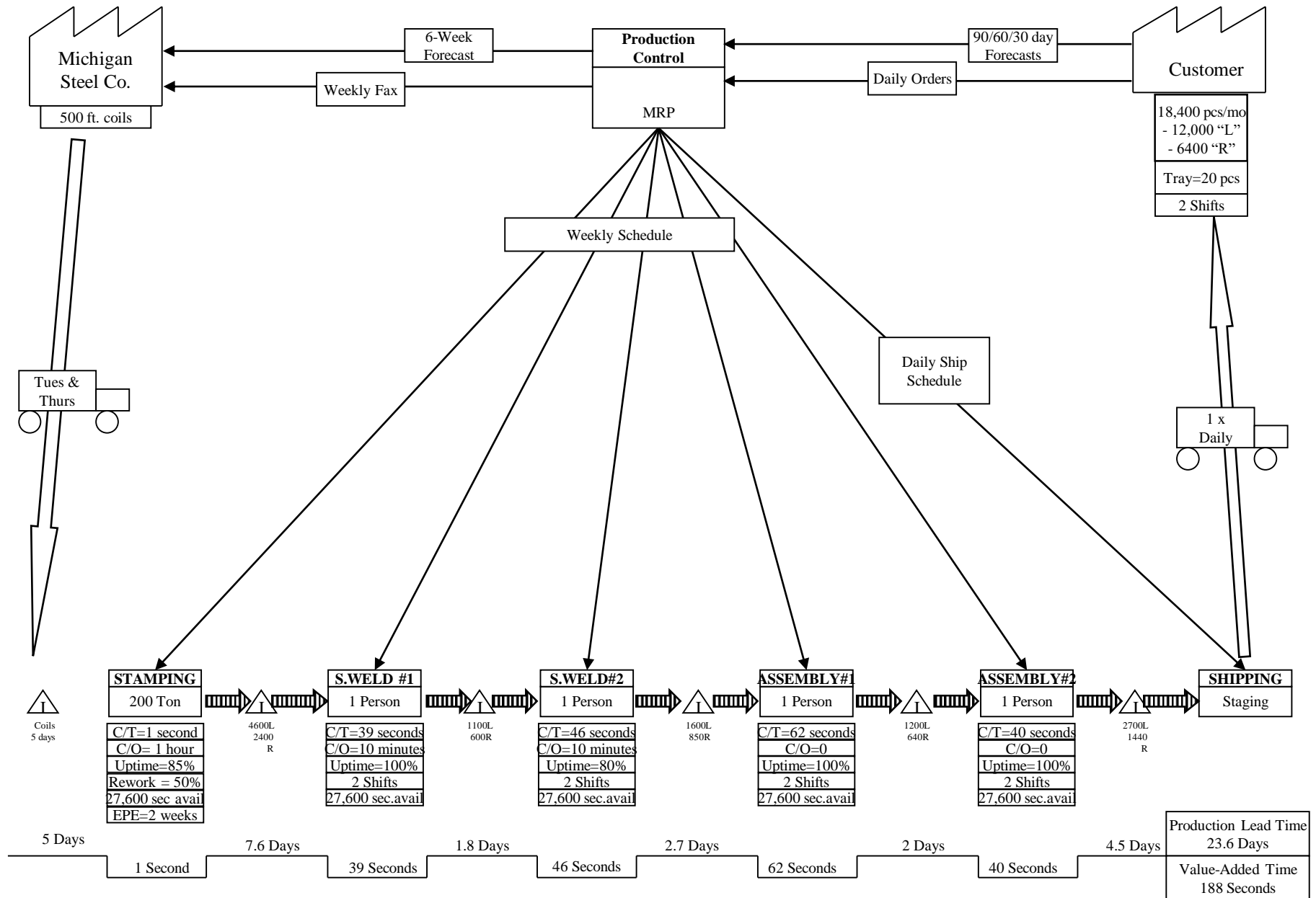




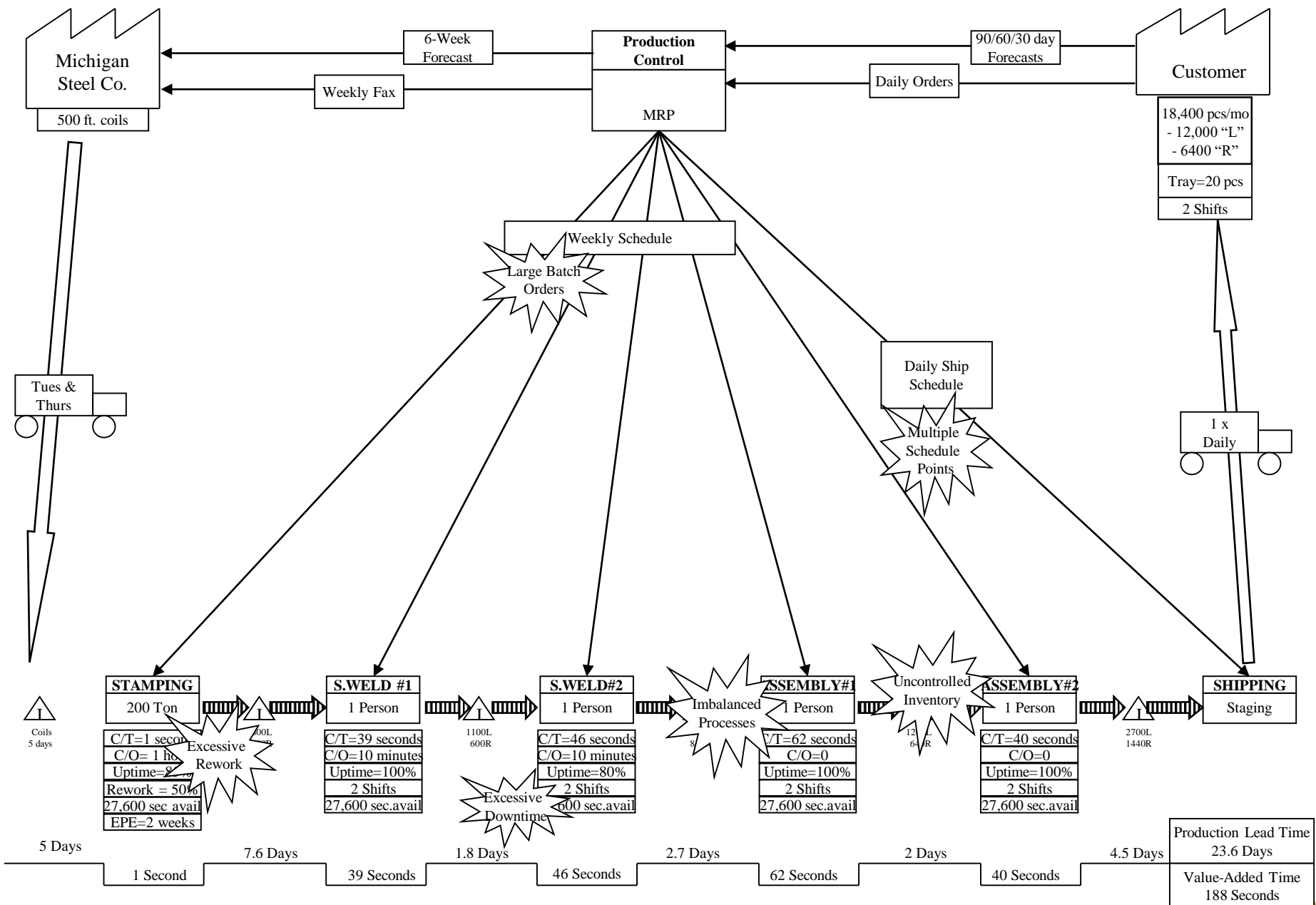




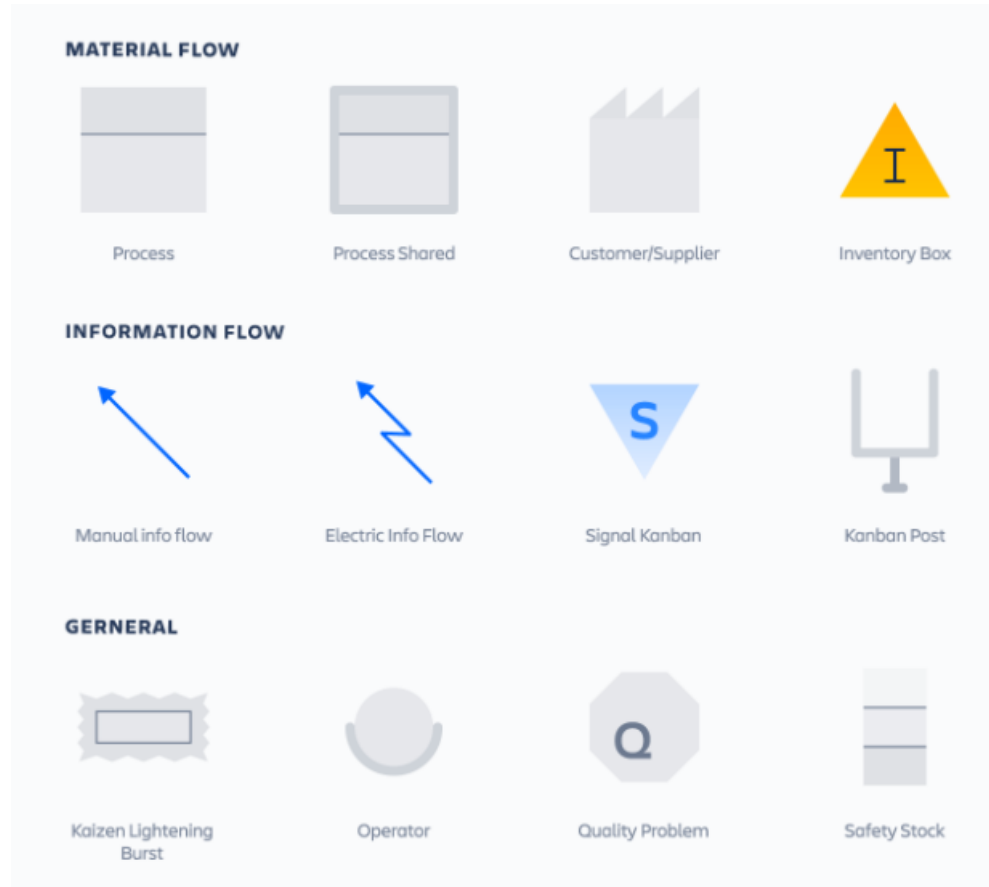
CURRENT STATE MAP



CURRENT STATE MAP



VALUE STREAM SYMBOLS



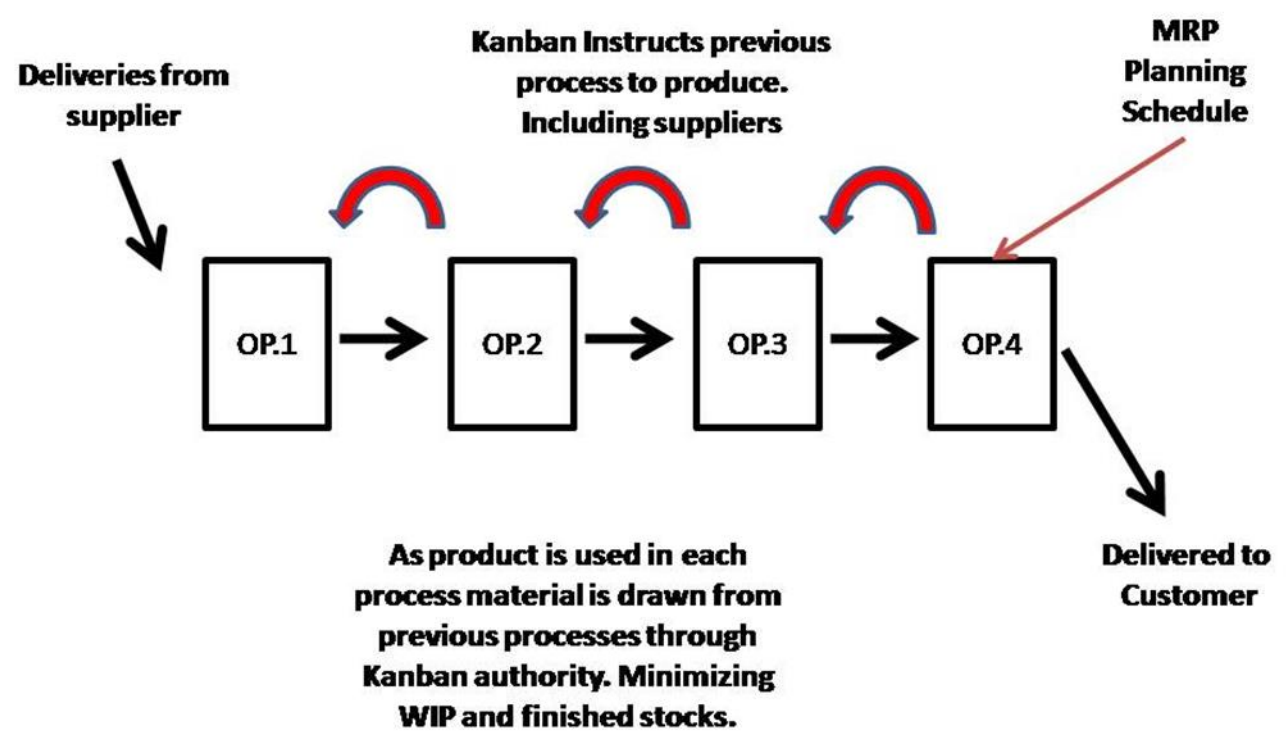


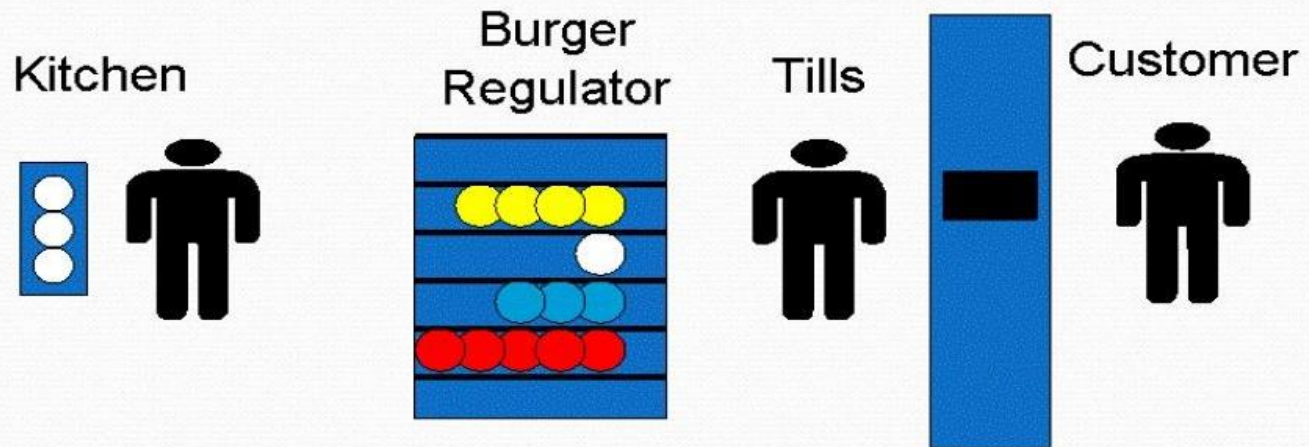
KANBAN CARDS & SYSTEMS





Pull Production





As each burger is consumed . . .
They are removed from the regulator . . .
And then replenished by the kitchen . . .
Not made to a forecast and pushed at the customer





GEMBA WALKS



WHAT IS A GEMBA WALK?

The Gemba walk is an essential part of the Lean management philosophy.

- Its purpose is to allow managers and leaders to observe the actual work process, engage with employees, gain knowledge about the work process and explore opportunities for continuous improvement.
- A Gemba Walk is also an opportunity for managers and leaders to coach and receive coaching.

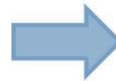
GEMBA WALKS

ARE NOT DONE ALONE

Gemba walks are meant to be coaching opportunities.

Step 1: Use your LSW to establish a day/time and stick to your schedule. Make it routine!

Traditional Management Style: "Do It My Way"



Lean Leadership Style: "Follow Me, and We'll Figure This Out Together"



DEFINE

THE PURPOSE

Define 'purpose' for walk – why doing it?

Define scope for walk – where headed?

Coach appropriate behaviors to participants:

- One conversation at a time.
- Show respect. Listen more than you talk.
- Make no on the spot judgements, seek to understand.

TYPES OF GEMBA WALKS



Safety



5S



Waste – Waste Walk



Process Focus – Never Focus
on Individuals



Walk the Value Stream of a Product





WHAT TO DO

ON A GEMBA WALK

- If with another leader, ask to SEE their leader standard work
- Review Hr x Hr and Tier Boards
- Review corrective actions / plans for top issues
- Discuss team board problem solving process
- Review training matrix and ensure plans are in place
- Pay attention to lean waste and review plans

TIPS & POINTS

TO REMEMBER

Step 1: Create a Theme

Before a walk begins, managers should pick a theme to guide the entire Gemba walk. This narrows the focus of the Gemba walk and yields better results, as attention is not spread amongst different themes and objectives. Once a theme has been chosen it's easier to tailor your Gemba walk questions to the theme you chose, and ask quality questions.

TIPS & POINTS

TO REMEMBER

Step 2: Prepare the Team

Inform the team by explaining what a Gemba walk is and what to expect from a routine Gemba walk. Share this in your Tier Meetings. Consider sharing your checklist, too.

This lowers a team's anxiety as the Gemba walk will not be perceived as an evaluation, but rather, a collaboration between participants. Getting buy-in from the team beforehand will also raise questions that could have been missed.

TIPS & POINTS

TO REMEMBER

Step 3: Focus on the Process

Stick to the evaluation of the process and how things are done. Here, a checklist can help. By writing questions that force you to assess the process, not the person, you can avoid the most common Gemba walk mistakes: **blaming.**

Remember: **You are there to identify opportunities of improvement in the process and barriers on the shop floor hindering productivity.**

TIPS & POINTS

TO REMEMBER

Step 4: Keep the Value Stream Front & Center

Make sure your checklist traces the whole value stream. By sketching these questions out beforehand, you can ensure you don't miss any crucial stations or processes.

Focusing the bulk of your Gemba walk on the value chain is more effective in identifying bottlenecks and potential pockets of waste. Removing such bottlenecks will improve overall performance across the value chain.

TIPS & POINTS

TO REMEMBER

Step 5: Record Your Observations

Record everything. Record every data point you encounter on your Gemba walk. Don't make assumptions or recommendations before journaling everything you find on the Gemba walk. Here, checklists are helpful. You can record your observations as answers to the questions you know you need answered. You can also just take notes or record and document your findings via video.

Regardless of method: **record, record, record!**

TIPS & POINTS

TO REMEMBER

Step 6: Get a Second Vantage Point

Once the Gemba walk has concluded and all relevant information has been recorded, seek a second opinion. Better yet, have another team member write their own checklist. **Having a fresh set of eyes review your findings could yield important insights.**

Comparing checklists can help you locate any gaps in your own thinking. This second perspective could be someone far removed from the operations or an experienced operator who did not take part in the Gemba walk. Feedback reveals overlooked information.

TIPS & POINTS

TO REMEMBER

Step 7: Solicit Feedback

Present your findings to the team regardless of outcome. Whether your findings were insignificant and no changes need to be made to the operations or vice versa. This brings the collaboration between stakeholders full circle and negates any feelings of being watched by the team during the Gemba walk.

If changes need to be made, include them in your presentation tying back to your findings. This brings buy-in from all stakeholders and increases probability of success once the change to operations occurs.

Conclusion

Gemba walks are a crucial observational method for assessing a manufacturing operation. Checklists are an easy, quick tool for adding structure to your observations, and for getting more out of the gemba walks you schedule. Use a checklist and stick to your plan.



QUESTIONS TO ASK

Simple 3 Question Summary:

1. What is Working?
2. What Is NOT Working?
3. Given That, What Will You Do Differently Going Forward?

GEMBA CHECKLIST

- ✓ What are you currently working on?
- ✓ Is there an established process for this type of work?
- ✓ Do you have any problems with the established processes?
- ✓ Why is there a problem? How can you fix the problem?
- ✓ What do you do to recognize root cause of the problem?
- ✓ Who do you speak with if there's a certain problem?

QUIZ 7:



1. How do you calculate Takt Time?
 - **Available Time divided by Customer Demand**
2. A Kanban is used as a signal for movement of raw materials. In which direction does a Kanban usually move?
 - **It moves to the supplier of the materials, parts, or finished goods**
3. What three questions can you ask on a gemba walk?
 - **What is working? What is not working? What can we do differently going forward?**



QUESTIONS?

