



Kaizen

Continuous Improvement

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Presentation Outline

- Kaizen Introduction and examples
- Enablers for Kaizen
 - Lean Management
 - Mentoring
 - Metrics
- Conclusions



Womack and Jones

- Understanding Value
- Looking at the Value Stream
- Continuous Flow
- Pull Principle
- Pursuit of Perfection

DNA of the Toyota Production System

Steve Spear / Kent Bowen

- Work is highly specified as to the content, sequence, timing, and outcome
- Customer-supplier relationships are direct
- Product or service pathway must be direct
- Improvements are to be made according to a scientific method



Answer this Question?

- 10 high paid experts (Six Sigma Type) save the company \$250K per year per project for a total savings of \$2.5M
- 1000 employees geared to save \$200 per project per month for an annual savings of \$2.4M



Look at it this way

- If we happen to have 1000 problems solvers we gain
- Time Value of money
- Rapid detection of problems
- Minimizing Risk

How do we transform our enterprise?

The Change Curve





Toyota's Kaizen Approach

- Highly systematic
- Way of thinking
- Elimination of Waste
- Look for weaknesses and improve them
- All aspects of the business

A person wearing a hard hat is working on a large, metallic, circular component, likely a wheel or a large gear, in an industrial setting. The scene is dimly lit, with a strong light source from the left creating a bright rim light on the person's silhouette and the edge of the wheel. The background is dark and out of focus.

Different Forms

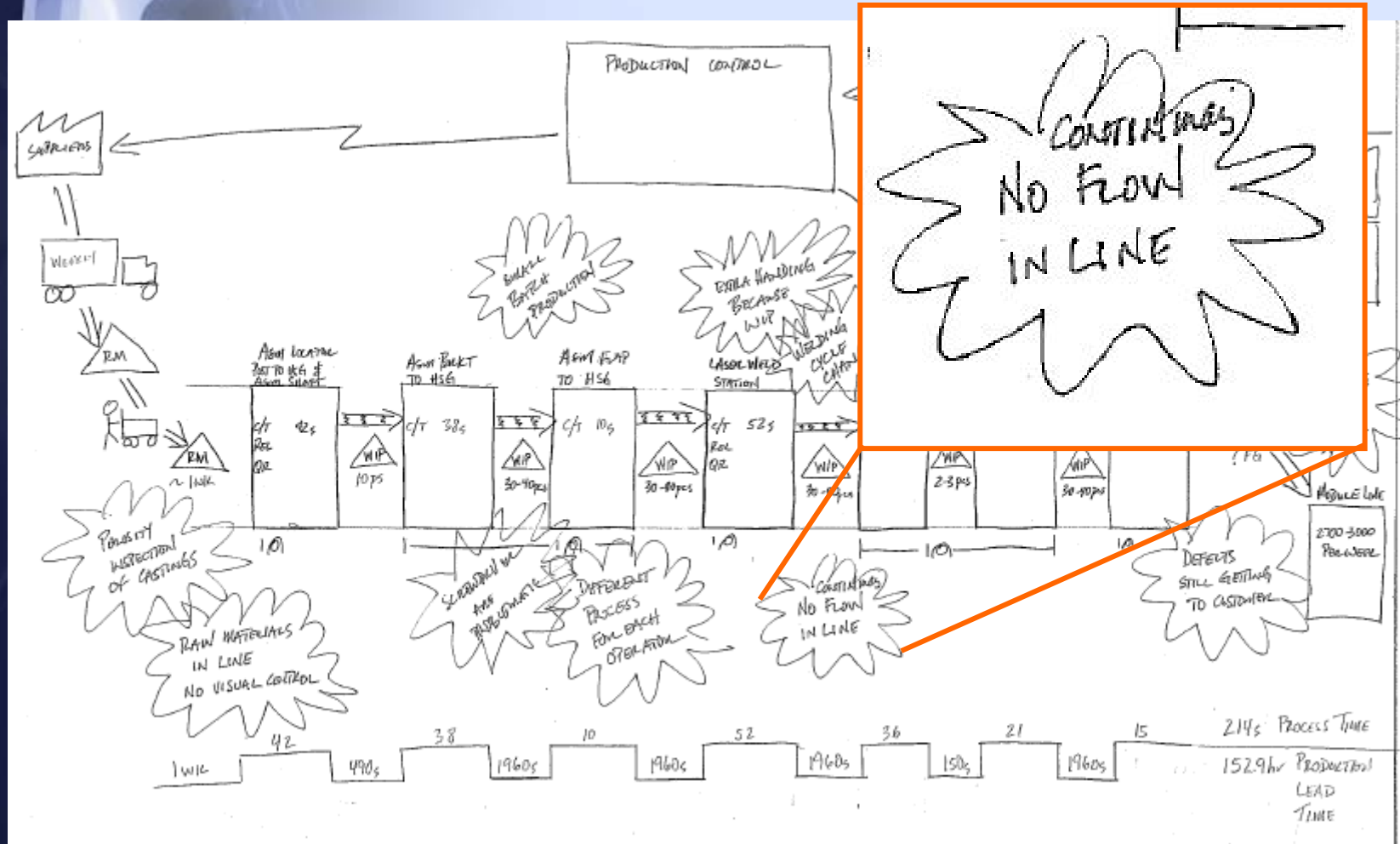
- Kaizen events
- Focused or Point Kaizen
- Kaizen Blitz
- A3 Problem Solving

Example 1

- 5 S workshops – Kaizen Event



Example 2



Before



- Excess Work in Process Inventory
- Operators waiting for machines
- No Teamwork

After



- WIP is eliminated
- Continuous Flow in the line
- Everyone works as a team

Example 3

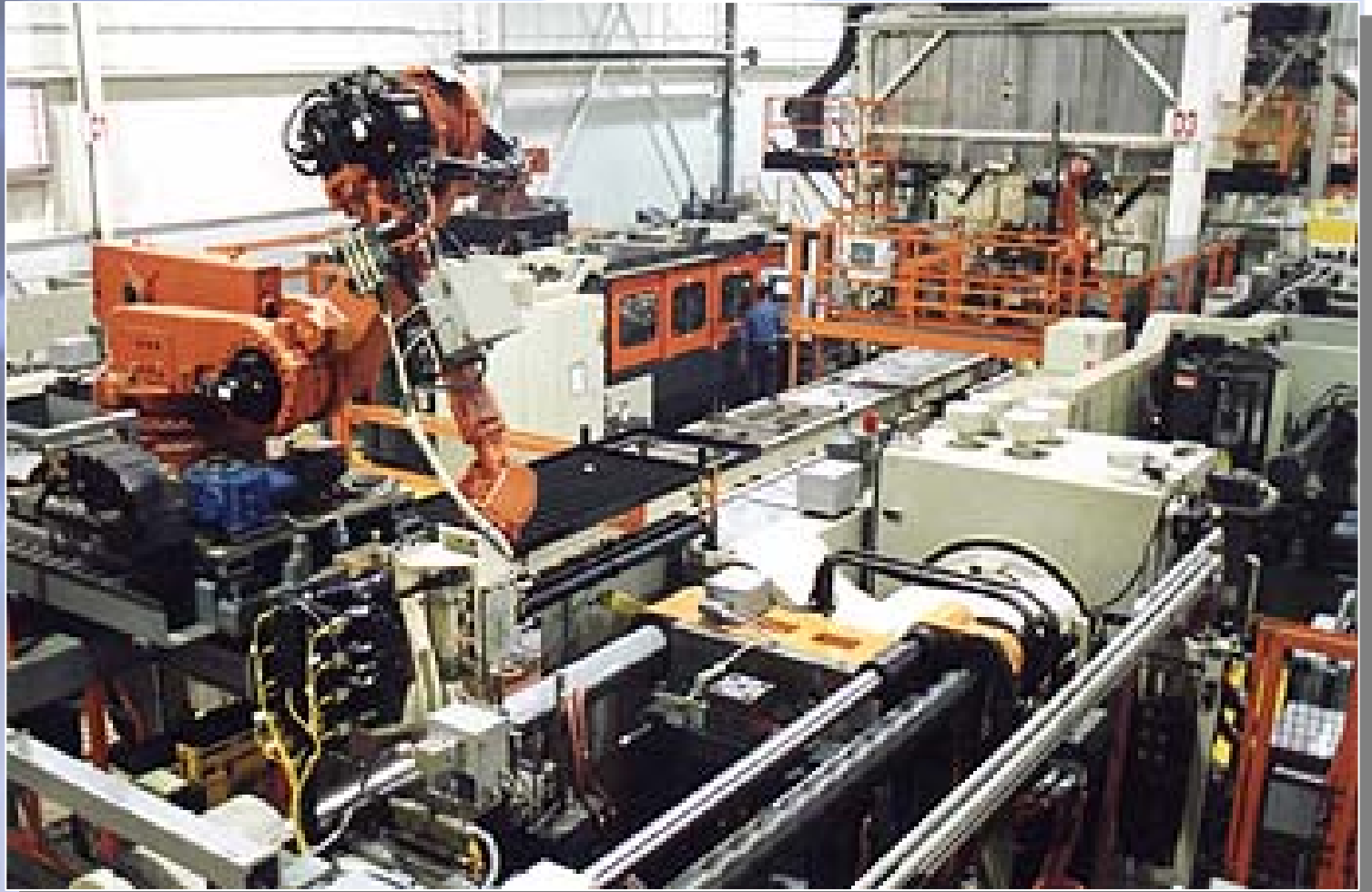
- Evolution of process improvement during the past few years
- A series of Value Stream Maps events had been performed
-

A person in a dark environment, possibly a factory or laboratory, looking at a large, glowing, curved structure. The scene is dimly lit, with the person's face and the structure's surface reflecting light. The overall tone is blue and futuristic.

Introduction

- This example of Value Stream Mapping shows the proper use of the tool and provides an example of the effectiveness of the tool and how it is used to identify targets for improvement that are achieved through kaizen

Lost Core Manufacturing Cell





First VSM Session - Initiatives

- Improve the FPY for the DFL area
- Minimize the inventory levels in this area
- Increase throughput by running masters at lunch breaks
- Recover metal rejects immediately

2nd Session

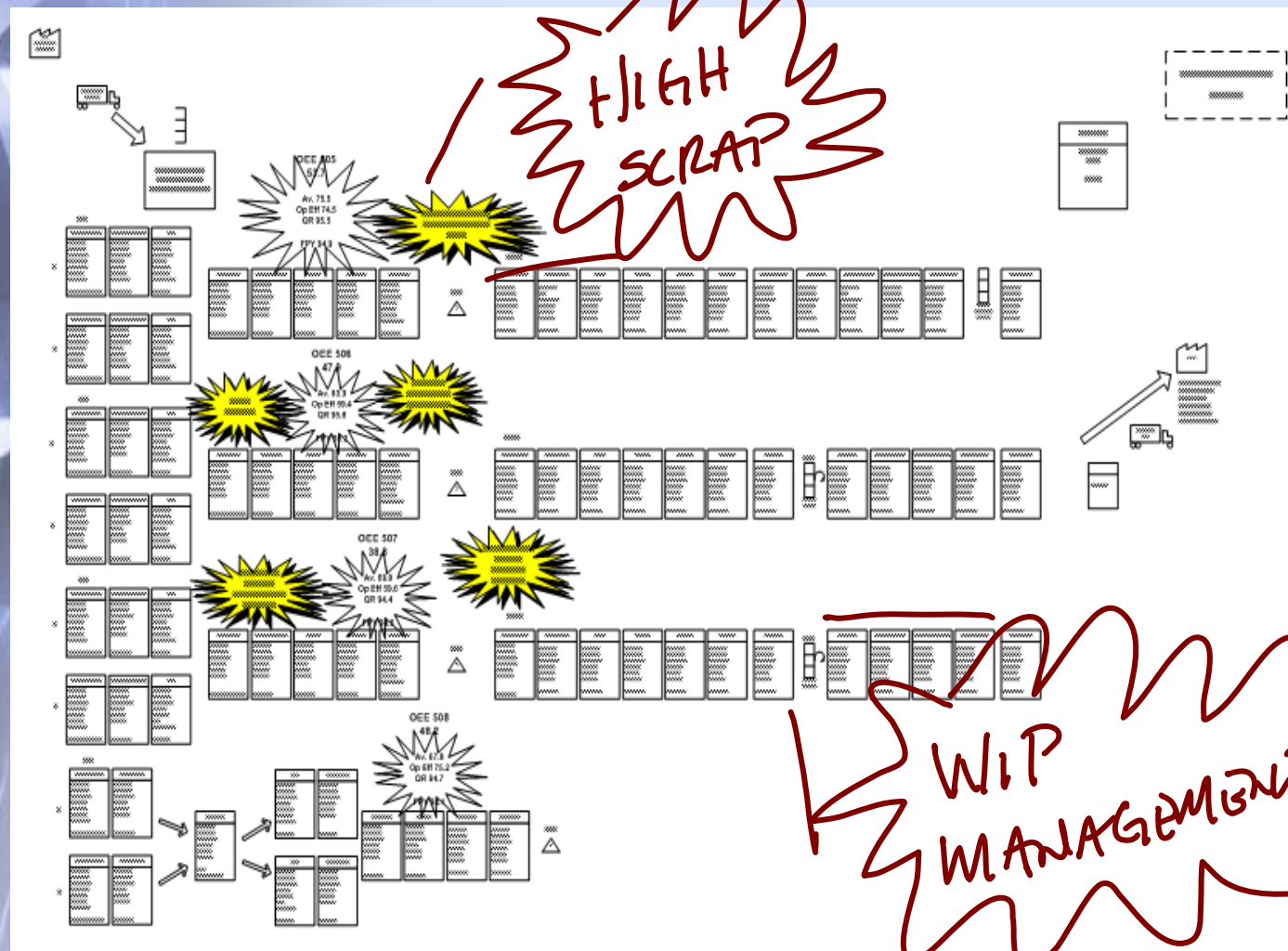




2nd Session Improvement - Initiatives

- Focused on the reduction of WIP at the DFL area identified for rework
- Identify the need for a uniform relieve strategy for breaks and lunches
- Managing the WIP Inventory for the assembly cells

3rd VSM Session





Key Initiatives from 3rd Session


- Improve the changeover for Assembly Cell 1
- Develop a scrap team to focus on ABU and 'Curlies'
- Move to a 5 day work schedule from the current continental 7 day schedule
- Identify WIP inventory management

Improvement Findings

	Year	'02	'03	'04
•				
•	Head count			20% decrease
•	Mould			
•	Asm			25% decrease
•	Inventory counts			
•	WIP			50% Decrease
•	FG			25% Decrease
•	Raw			60% Decrease
•	Scrap%			56% Decrease
•	OEE			
•	Availability			25% increase
•	Operating Efficiency			7% increase
•	Quality Rating			6% increase
•	Overall OEE			39% increase
•				

No Flow Process



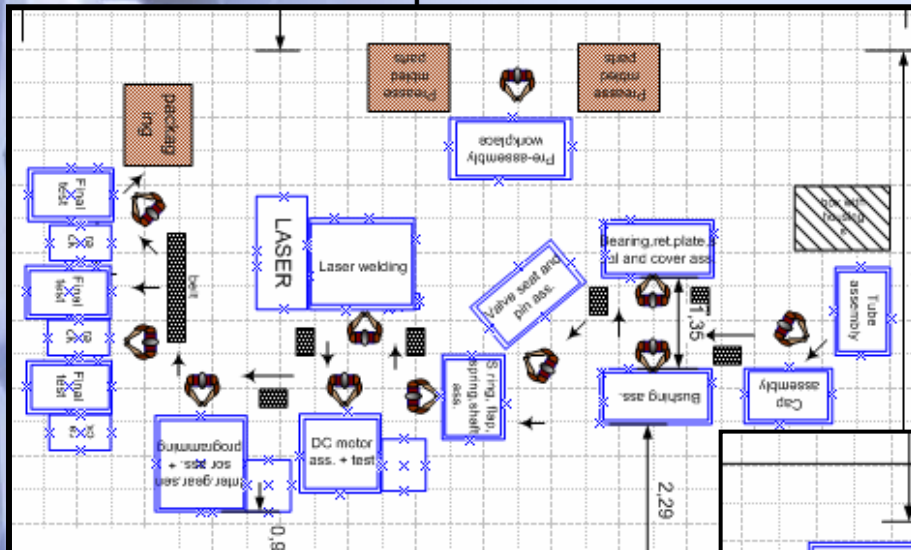


Developing a Systematic Approach

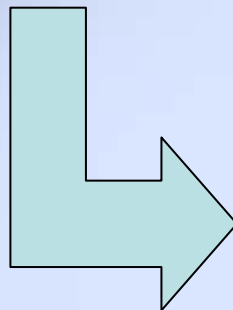
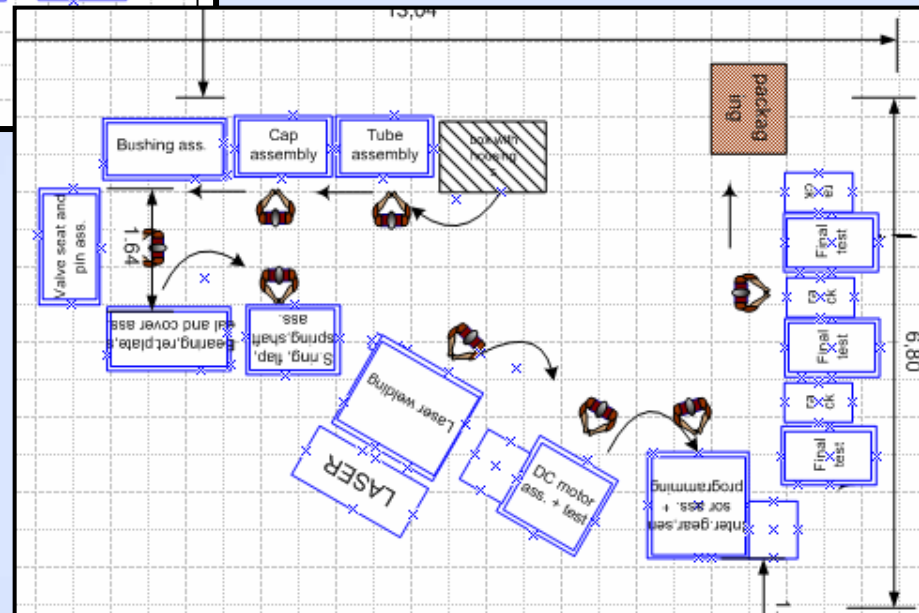
- Starting with TAKT and moving through to station design
- Starting off with Continuous Flow
- Building Flexibility in equipment
- Balancing the workload and number of operators based on TAKT
- Incorporating Material Handling

Progression to Improvements

Initial Concept



Final Concept





Enablers for Kaizen

- Lean Management
- Mentor or Facilitator
- Metrics geared toward behaviour change

Traditional Management

**Functionally Oriented
Organize**

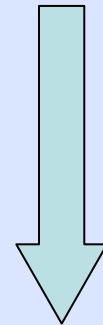
Manager

Supervisor

Supervisor

Job Classification Employees

Decision Making



Lean Management

**Process Oriented
Organize**

Coach

Decision Making

Teammates

Decision Making



Lean Management

- Asks the questions
- Trying things out or getting others to try things
- Not trying to be right but trying to understand the problem in order to make it right
- Foster Learning by exposing problems, developing countermeasures and evaluating solution.



Lean Management adaptability

- Set based product design
- J-I-T Capacity – increase capacity incrementally
- Flexible operating pattern
- Manage production lines via TAKT
- Use standard work as the basis for continuous improvement



Lean Mentor

- The facilitator helps people understand the method
- Provides guidance and education to the group
- Helps people through the obstacles to change



Metrics

- Key performance indicators that reinforce a lean approach
- Not necessary for KPI's to be tied to the bottom line
- Understand how the KPI's affect the bottom line



Summary

- Kaizen is at the heart of any Lean Transformation
- It helps if there are proper enablers
- Key element is for everyone to do their part and results will come