

# INDUSTRY KEYNOTE



## Art Smalley

Principal, Art Of Lean

Art Smalley, is an expert in the area of world class methods for operational improvements. Art was one of the first American's to work for Toyota Motor Corporation in Japan where he learned the TPS manufacturing principles in Taiichi Ohno's engine plant.

Art also serves as a faculty member of the Lean Enterprise Institute and is Author of "Creating Level Pull", Co-Author of "A3 Thinking" and "Toyota's Kaizen Method: Six Steps to Improvement".





ART of LEAN

# EXCELLENCE IN LEAN

Presented by  
Art Smalley  
President  
Art of Lean, Inc.

# Outline For Today's Discussion

- Introduction
- First principles of TPS / Lean
- Roadmaps
- Requested topics
- General summary advice
- Final Q&A

# Introduction / Background

1. Employed by Toyota Motor Corporation in Japan
  - Kamigo engine plant – Ohno's TPS model
  - Overseas plant start-up support work
2. Director of Lean Donnelly Corporation
  - 5-year Lean transformation effort
  - Multiple awards and recognition
3. Manufacturing Consultant McKinsey & Company
  - Multiple engagements & sectors
  - Thought leadership & knowledge development
4. President Art of Lean, Inc.
  - Serve clients implementing Lean
  - Write articles and books
  - Speaking engagements
  - Training / improvement workshops

# First Principles / 8 Questions

1. How will you satisfy the customer and obtain a profit?

2. What are your main problems in production?

3. How will you build in quality?

4. How will you deliver 100% JIT?

5. How will you stabilize the process availability to 100%?

6. How will you standardized work 100%?

7. How will you develop natural work team leaders?

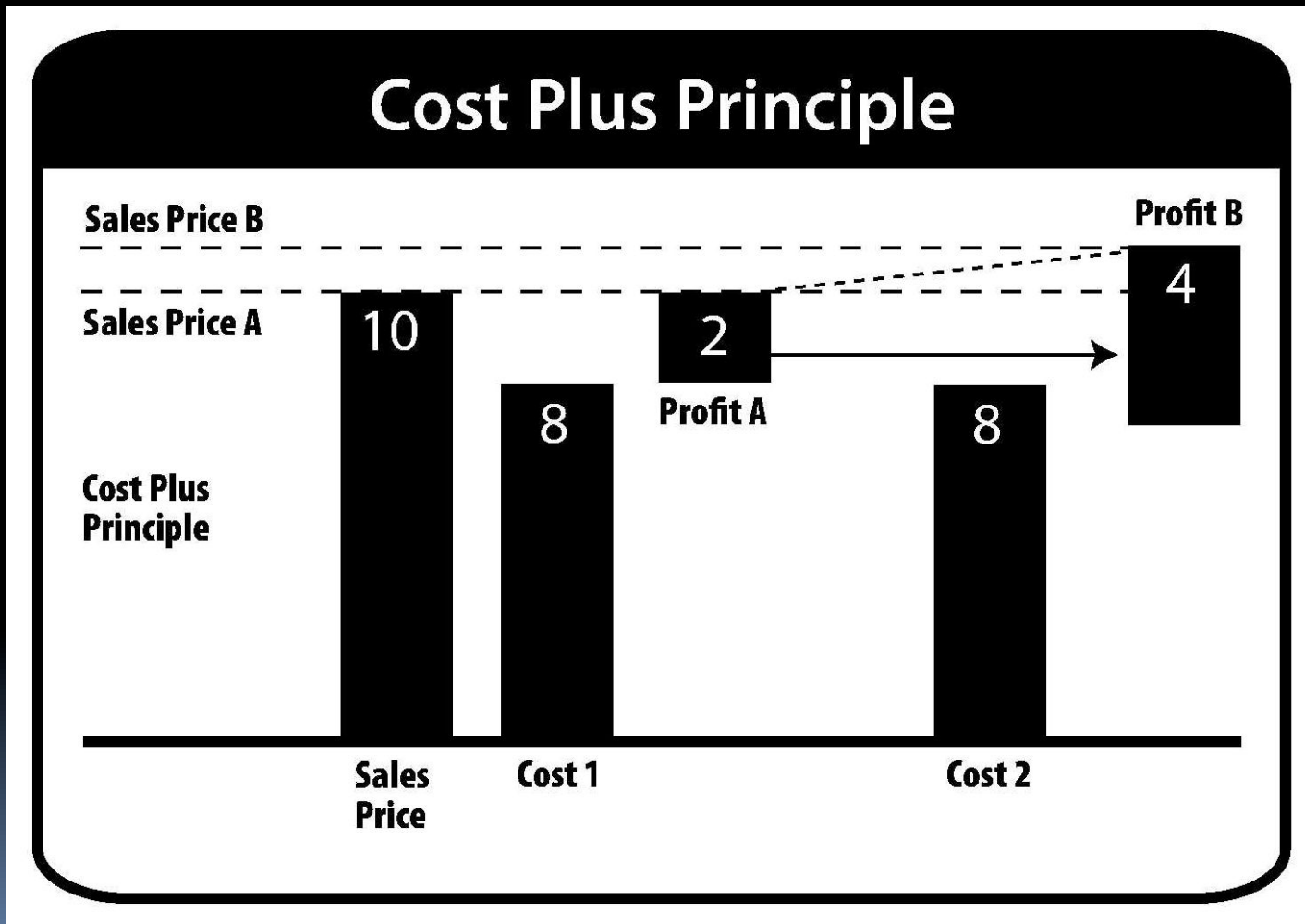
8. How will your company sustain and improve?

# Customer Value and Profit – 1/3

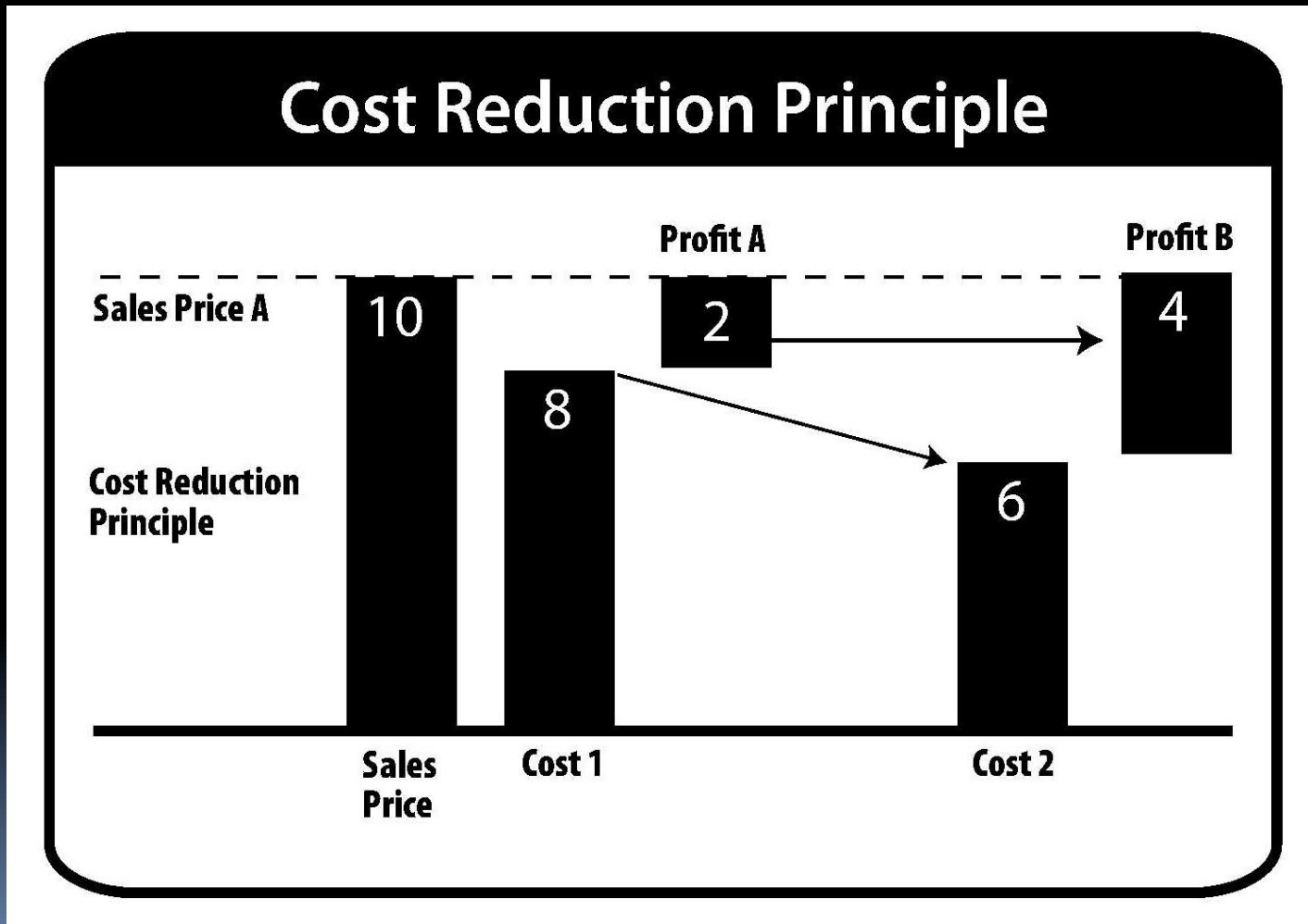
## Supplier requirements

- 100% on time
- 100% quality
- Short lead time
- Flexibly respond to changes
- Price/Cost improvements
- Spirit of cooperation

# Customer Value and Profit – 2/3

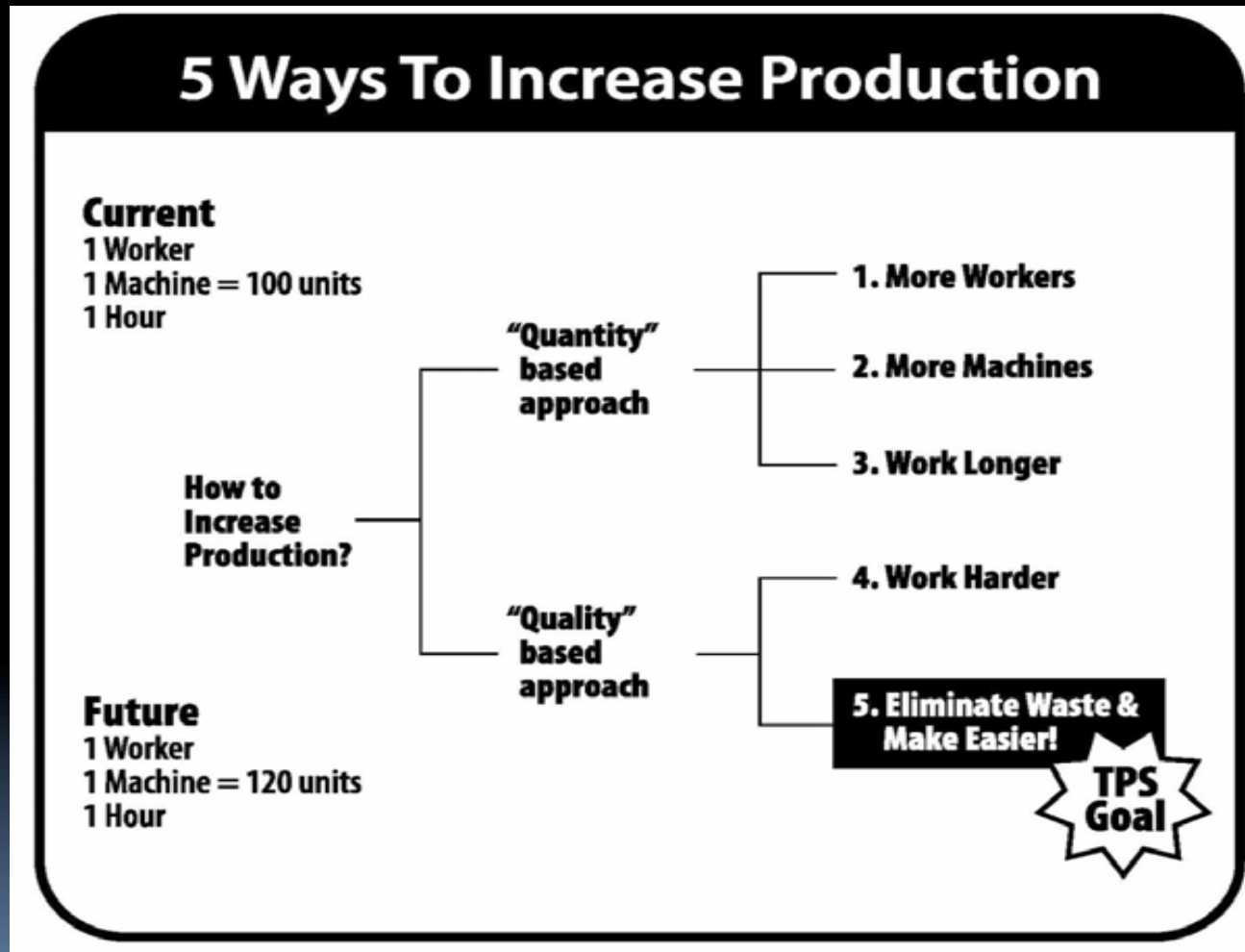


# Customer Value and Profit – 3/3





# Lean Excellence is Free



# First Principles / 8 Questions

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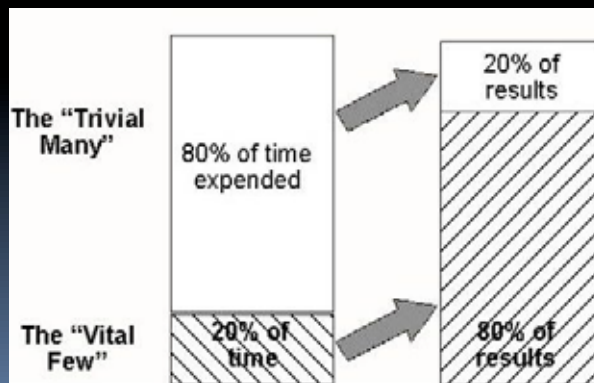
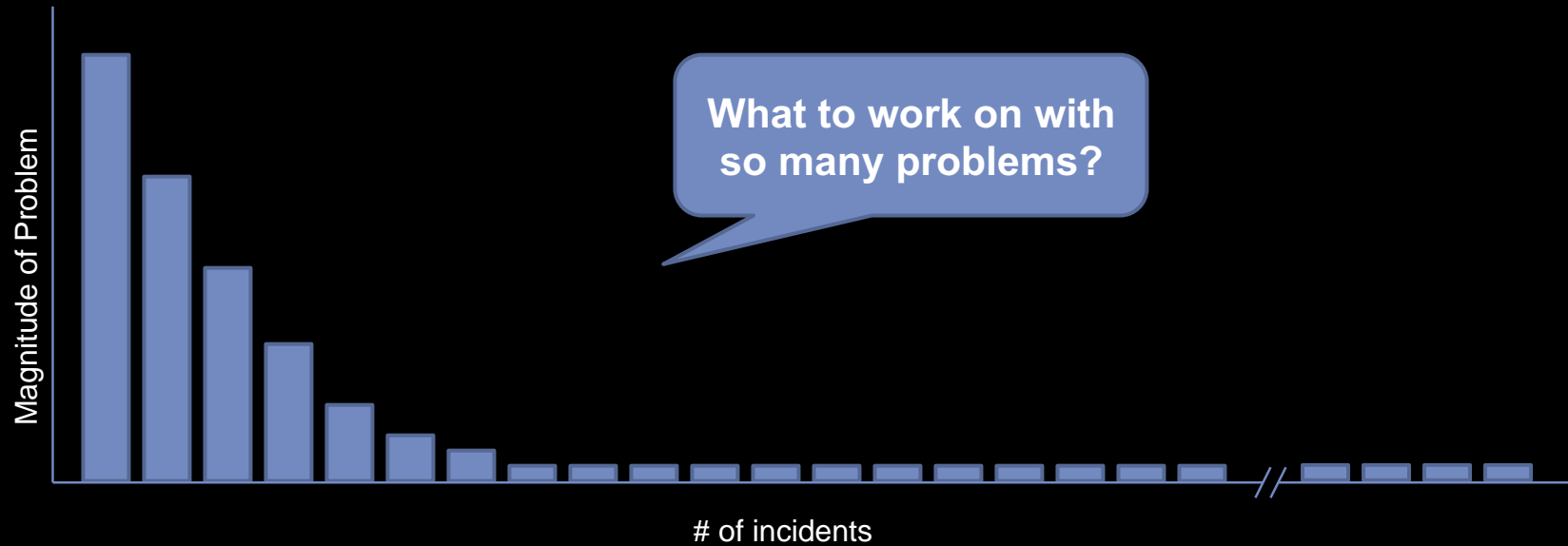
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## 2. Vital Few Versus The Trivial Many



"In problem solving you have to learn to sort out the vital few from the trivial many."

- Joseph M. Duran

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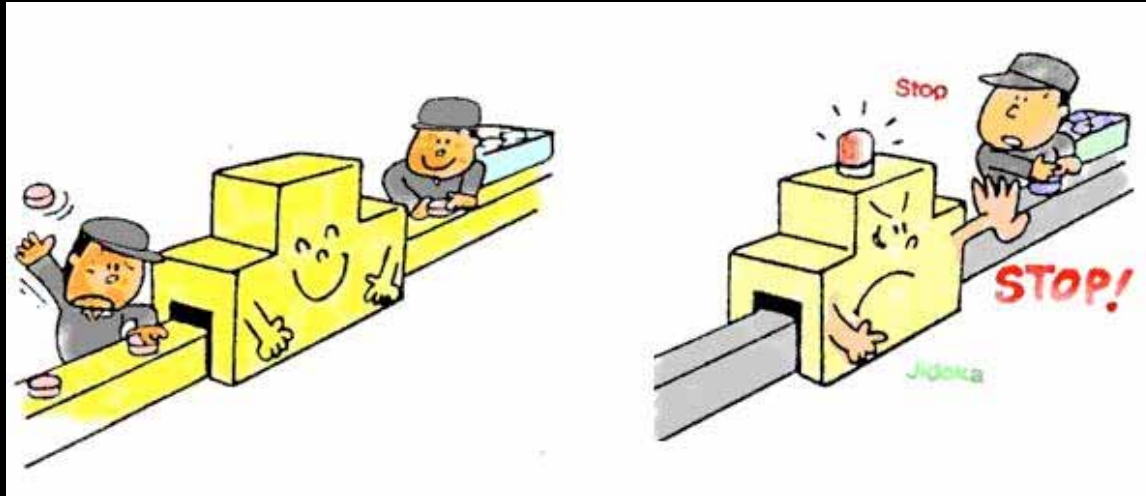
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### 3. Build-in-Quality (Jidoka) 100%



1. Proper work instructions, standards, and training
2. Error proofing against simple known mistakes
3. High process capability (1.33 – 2.0 Cpk)
4. Stop the line capability (Man or Machine)
5. Quality control system with layered audits and feedback

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# 4. Just-in-Time 100% - 1

1. Unload Truck



2. Deliver to line



3. Unload Parts



8. Signal to supplier



4. Detach kanban



7. Sort kanban



6. Pick up from post hourly



5. Put kanban in post



# 4. Just-in-Time 100% - 2

1. Print out kanban



2. Load Heijunka box



3. Pull at timed interval



4. Deliver to line



5. Receive instruction



6. Make parts as signaled



7. FG Store



8. Shipping Lane



9. Load truck for ship





# First Principles / 8 Questions

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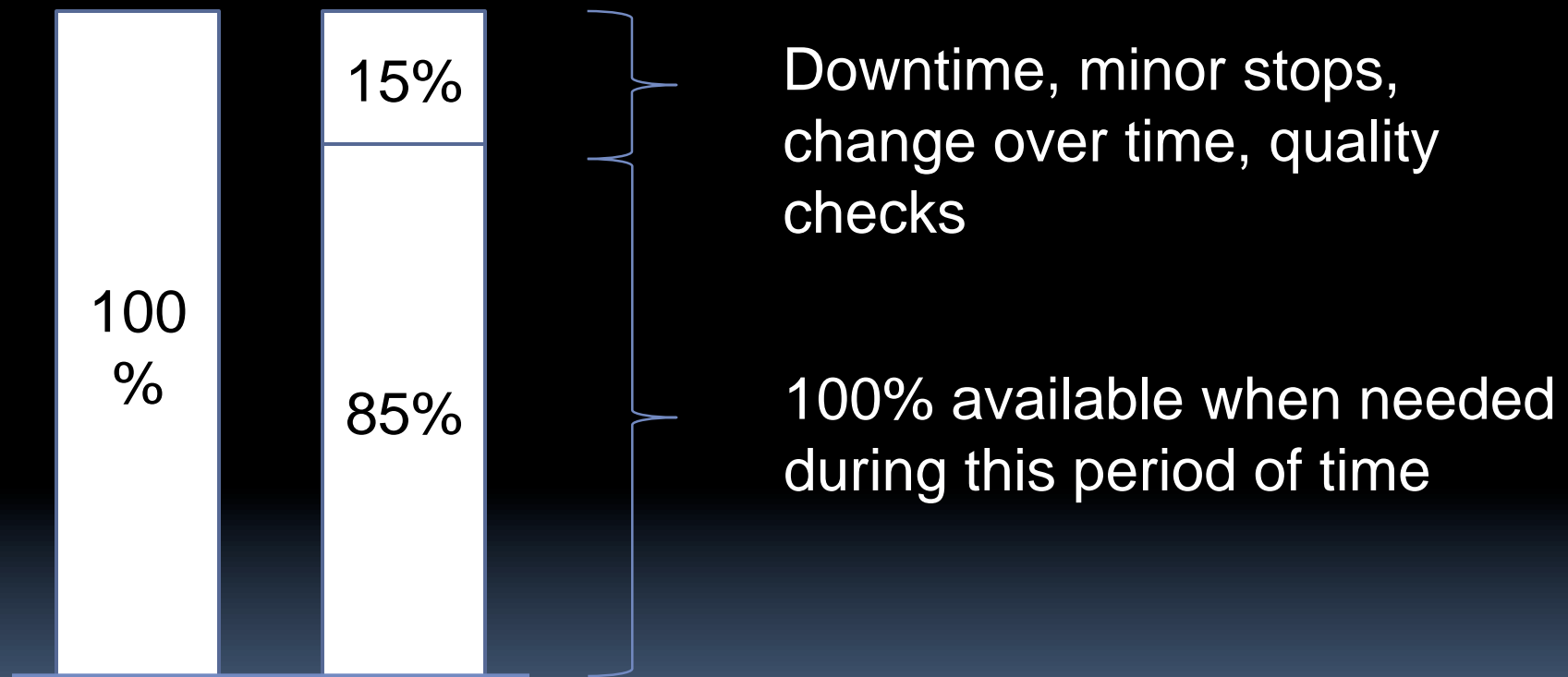
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→ 8. How will your company sustain and improve?

## 5. 100% Available When Needed\*



\*Machining example

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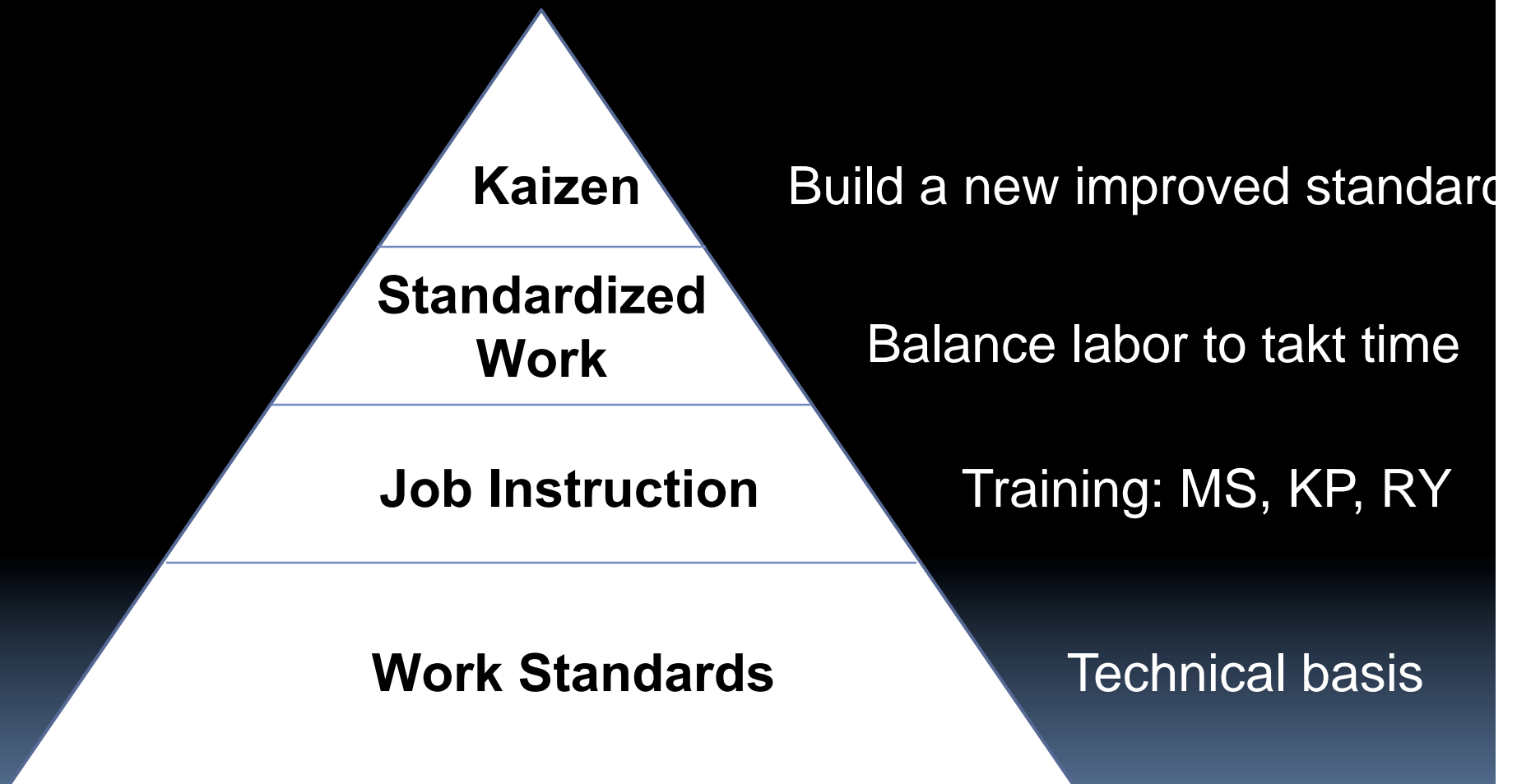
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→ 7. How will you develop natural work team leaders?

→ 8. How will your company sustain and improve?

# 6. Standardize Work Practices



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6. How will you standardized work 100%?

7. How will you develop natural work team leaders?

8. How will your company sustain and improve?

# 7. Develop Work Team Leaders

1. Knowledge of work  
-(e.g. how we do things)
2. Knowledge of responsibility  
-(e.g. what we need to do by when)
3. Skill in instructing  
-(e.g. how to teach effectively)
4. Skill in leading  
-(e.g. how to handle job relations)
5. Skill in improving  
-(e.g. how to make improvements )



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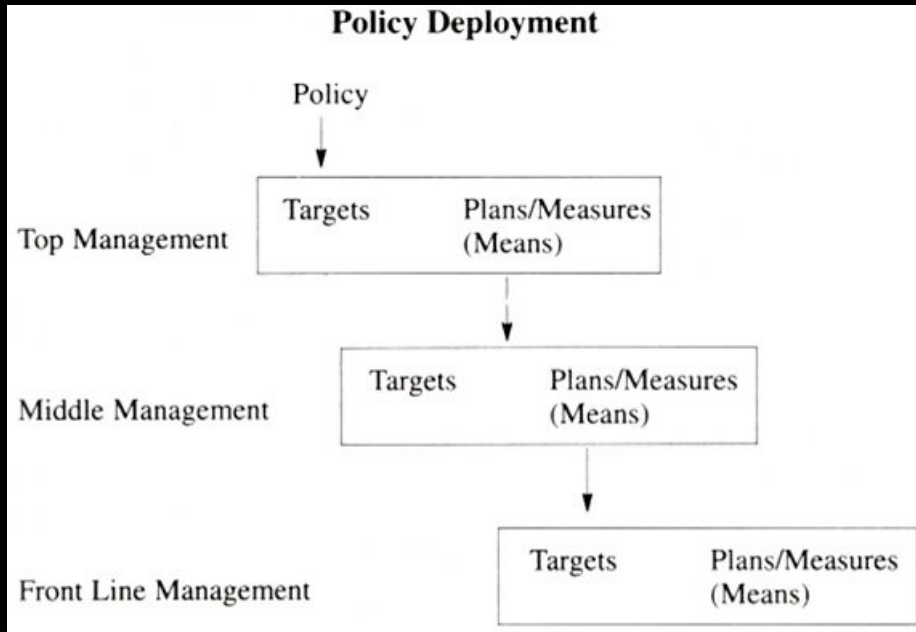
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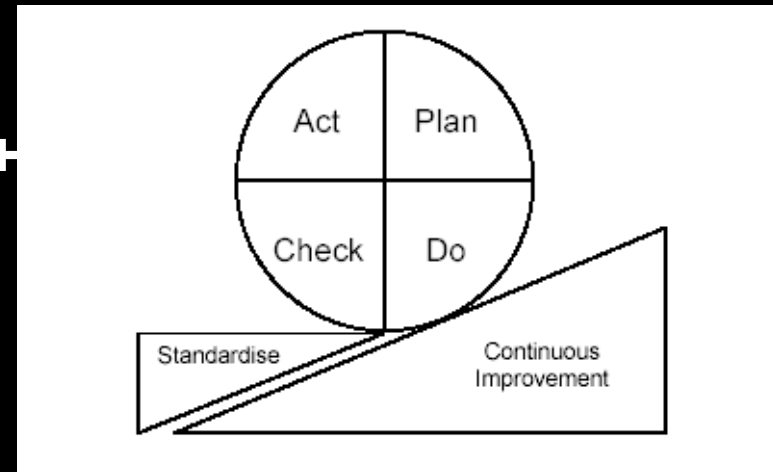
7. How will you develop natural work team leaders?

8. How will your company sustain and improve?

# 8. Sustain and Improve



+



- Annually
- Quarterly
- Monthly
- Weekly
- Daily
- Shift
- Takt Time



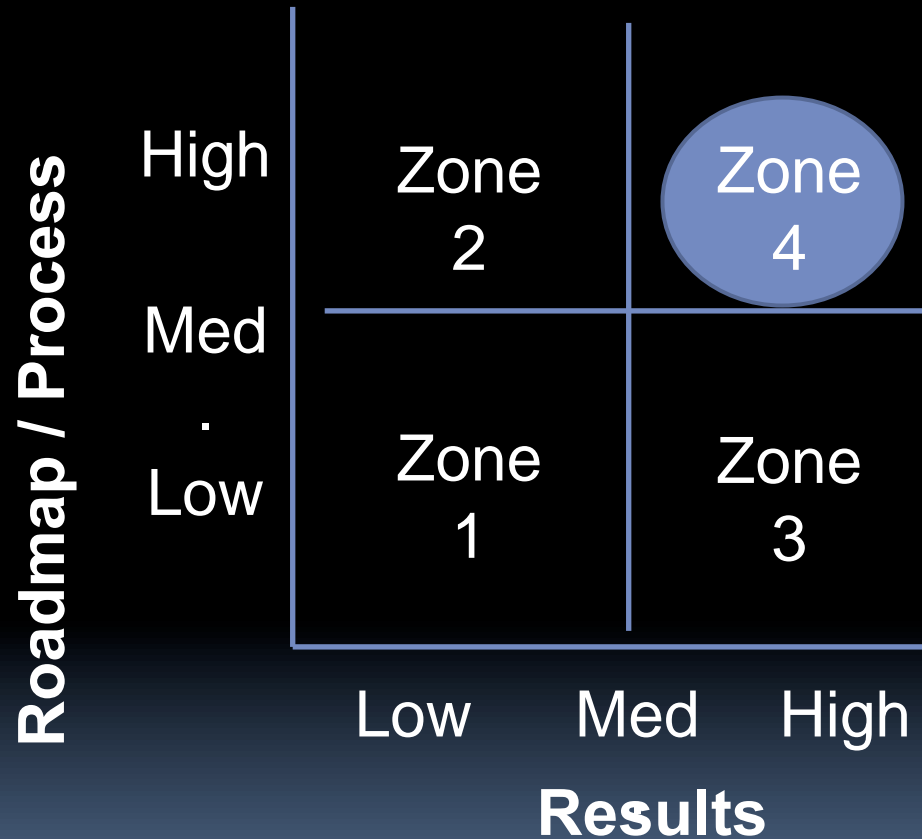
# Shingo Prize Organization

1. Respect every individual
2. Lead with humility
3. Seek perfection
4. Assure quality at the source
5. Flow and pull value
6. Embrace scientific thinking
7. Focus on the process
8. Think systematically
9. Create constancy of purpose
10. Create value for the customer

# SEA Roadmap

	Stage One Stabilization	Stage Two Supply Chain Integration	Stage Three Sustainability
<b>Leadership &amp; Culture</b>	1.1.1 Strategic Planning Process 1.1.2 Leadership Communication Process 1.1.3 Organizational Performance Review Process 1.1.4 Continuous Improvement Management Process 1.1.5 Workforce Development Integration Process	1.2.1 Goals Deployment & Review Process 1.2.2 Values Deployment Process 1.2.3 Supply Chain Integration Process	1.3.1 Organizational Learning Process 1.3.2 Organizational Assessment Process
<b>Workforce Development</b>	2.1.1 Job Skills & Cross-Training Certification Process	2.2.1 Continuous Improvement Process 2.2.2 Statistical Methods Process	2.3.1 Team Control Process
<b>Operational Excellence</b>	3.1.1 Kaizen Process 3.1.2 6S Visual Workplace Process 3.1.3 Quick Changeover/SMED Process 3.1.4 Material Management Process 3.1.5 Production Planning Process	3.2.1 Flow-Based Material Process 3.2.2 Mixed Model Cell/Line Design Process 3.2.3 Lean Suggestion Process 3.2.4 Total Productive Maintenance Process	3.3.1 Design of Experiments Process 3.3.2 Design to Cost Process 3.3.3 Six Sigma Projects Process 3.3.4 Six Sigma Design Process 3.3.5 Design for Manufacturability Process
<b>Business Results</b>	4.1.1 Inventory Turns 4.1.2 Sales/Employee 4.1.3 On-Time Delivery 4.1.4 Parts per Million 4.1.5 Process Maturity 3 and above	4.2.1 Cpk	4.3.1 Rolled Yield

# Results vs. Process



## Benefits

- Increased profits
- Improved quality
- Enhanced productivity
- Reliable delivery
- Improve safety & morale

# Requested Topics

- Learning from other industries
- Benchmarking
- Building early momentum and success
- Obtaining buy in
- Unique cases / we are special
- Degrees of outsourcing
- How fast is fast enough?
- Reports of Toyota's Death

# General summary advice

- Keep in mind the 8 principles
- Follow your roadmap & check results
- Strategy & execution linkage
- Senior leadership involvement
- Company wide focus
- Relentless execution / PDCA cycle
- Kaizen & Respect for people

# Final Q&A

# Appendix

# Art Smalley / Art of Lean, Inc.

<http://www.artoflean.com>

