Three Levels of Culture

What we see, what a newcomer, visitor or consultant would notice (e.g., dress, organization charts, physical layout, degree and formality, logos, and mission statement.

What they say, What we would be told is the reason things are the way they are and should be. Company philosophy, norms and justifications.

What they deeply believe in and act on
Unconscious, taken for granted beliefs about the organization and its work/purpose, about people, rewards etc.

A Partnership between an Organization & its Employees

- Organization provides Stable Employment & Sustains or Improves Working Conditions

- **Organizational**
  - Prosperity is achieved through Continuous Improvement

- **Respect Partnership Mutual Trust**
  - Continuous Improvement

- **Employees**
  - Satisfaction is experienced through the Continuous Improvement Process

- Employees Contribute Efforts to Realize Company Objectives
Make problems and opportunities for kaizen visible.

<table>
<thead>
<tr>
<th>Safety</th>
<th>Quality</th>
<th>Productivity</th>
<th>Cost</th>
<th>HR</th>
</tr>
</thead>
</table>
The Toyota Way

**THE TOYOTA WAY**

- **Respect for People**
  - Teamwork
  - Respect
  - Challenge
  - Genchi Genbutsu
  - Kaizen

- **Continuous Improvement**

**Values**

**Toyota Basic Business Practices**

- by concentrating knowledge of each & every employee
- for the benefit of all customers & stakeholders
- we strive to realize ambitious goals
- through steady, fact-driven progress
- pursuing highest standards of excellence guided by best possible course of action
Identifying Lean Core Competencies

Thinking and Operational Abilities

- Grasp the Situation
- Problem Solving
- Process Management
- Company Business Perspective
- Development
- Operational and Technical Skills
Identifying Lean Core Competencies

Leadership & Teamwork Abilities

- Coordinate and Communicate
- Collaborate and Cooperate
- Initiate and Influence
- Build and Maintain Relationships
Original Recruitment to Selection Process for Georgetown, Kentucky

Phase 1
Advertizing & Recruitment
142,000 Applicants

Phase 2
Orientation, Application & Testing
28,000 Passed

Phase 3
Assessment Center
12,000 Passed

Phase 4
Final Screening
8000 Passed

Phase 5
Assess Health & References
6000 Job Offers

Phase 6
Probation
12,000 Passed

142,000 Applicants
28,000 Passed
12,000 Passed
Example on-line Simulation for Second Phase Testing
Applicant doing simulated “welding” exercise in the Assessment Area
Step-by-Step Progression to Stable Job Performance

1. ID Fundamental Skills for a Class of jobs
2. Train in Fundamental Skills off of Line (GPC)
3. Job Breakdown to Work Elements for Specific Job
4. Use Toyota Job Instruction (TJI) to Train Associate
5. Follow-up & Support until Masters Job
6. Continuously Improve Job & Job Instruction

Off-Line Skills Training
On-Job-Development
Example Video Manual
Example Simulated Jobs

Painting requires rhythm and precision

Simulations and Image Training make hidden work visible
THE OBJECTIVES OF STANDARDIZATION

- Reduce variability, increase predictability
- Enhance repeatability, confidence, consistency
- Clarify procedures
- Enhance communication
- Improve Problem Solving
- Set good discipline
- Develop awareness
- Establish “Problem Consciousness”
- Establish a basis for education and training
- Establish a baseline for performance
- Improve Quality, Safety, Delivery, Cost
- Provide the basis for Improvement
The Four Steps of JIT

Step 1: PREPARE WORKER
Step 2: PRESENT OPERATION
Step 3: TRY OUT PERFORMANCE
Step 4: FOLLOW UP

Major Steps
Key Points
Reasons

Plan
Action
Check
Do
Sample TMMK New Hire Training Program

PHASE I: New Hire or Temporary

Each Step:
- **Plan**: Classroom Training
- **Action**: Extend Assignment
- **Check**: Assess./Evaluation
- **Do**: OJT/Homework

PHASE II: TMMK New Hire

- **STW**: *Teamwork
- **PIKA**: *Problem Solving
- **STW**: *Meeting Facilitation
- **STW**: *External Hire
- **STW**: *Catch-up
- **STW**: *Visual Control
- **STW**: *Two Way Communicat.
- **STW**: *Ergonomics
- **STW**: *Process Diagnostics
- **STW**: *Conflict Resolution
- **STW**: *KPI/\$
- **STW**: *Business Direction

Grow-in Complete

OJT/Production Experience


2 years

5 years

2008

2010

2013

Overview:

Skills/Pay

Overview:


2 years

5 years
Toyota Training and Development

**Manager Level**
Focus on Shop Floor and Systems Improvement.
Tools: Visual Factory & TBP

**Team Leader and Group Leader**
Manage Standardized Work, Process Improvement and Develop Problem Solving Skills. Tools: FMDS, TBP & OJD

**Team Member**
Focus on Fundamental Skills & Standardized Work
Tools: Skills Training, Job Instruction, Standardized Work and 5-S

**General Manager and VP Level**
Business Planning and Policy Deployment Tools: Hoshin Planning & Toyota Business Practices (TBP)
What is a problem in lean?

In Lean, we appreciate problems! They are considered opportunities for Kaizen. We need to aggressively uncover them.

Finding problems is the first step for problem solving. Otherwise there will be neither Kaizen ideas nor evolution in the future.

At times it is our tendency to ignore or mask problems, in hopes they will disappear. This action could lead to increasing costs and muda.

“No one has more trouble than the person who claims to have no trouble.”
(Having no problems is the biggest problem of all.)

Taiichi Ohno
## Western versus Toyota View of Problems

<table>
<thead>
<tr>
<th></th>
<th>Traditional Western</th>
<th>Toyota</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is a problem?</td>
<td>Result of someone messing up</td>
<td>Deviation from standard</td>
</tr>
<tr>
<td>What is the cause?</td>
<td>Individual (5 Whos)</td>
<td>System (5 Whys)</td>
</tr>
<tr>
<td>Who is responsible?</td>
<td>Person who makes mistake</td>
<td>Management</td>
</tr>
<tr>
<td>What should individual who</td>
<td>Solve problem on own if possible</td>
<td>Call attention to problem for assistance and to avoid the problem in the future</td>
</tr>
<tr>
<td>makes mistake do?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assumptions about People</td>
<td>They will not accept blame unless forced to</td>
<td>They will feel empowered if they get positive support for solving problems</td>
</tr>
<tr>
<td>Problem solving skill</td>
<td>Some have it, some don't</td>
<td>It can and must be taught</td>
</tr>
</tbody>
</table>
PDCA in our Daily Work

- Business Planning
- Project Management
- Problem Solving/Kaizen
- Daily Work
- A-3 Report
- A-3 Action Plans-Master Schedule
- Hoshin Kanri

TOOLS

GTS
Toyota Continuous Improvement Culture

Underlying Assumption: Human and Technical Processes are interrelated and dynamic so initial designs are only a rough starting point which must be continuously improved by every team member.

Results: High levels of engagement at all levels in the actual process leads to continuous strengthening of the system and high congruence between expectations and reality.
Three Stages of Problem Solving

- **Problem Solving** that results in getting to the goal.
  - Must establish standards and train to the standards. Strict follow-up.

- **Problem Solving** that focuses on maintaining the goal.
  - Establish system / procedures to maintain the standards

- **Problem Solving** that focuses on increasing capability beyond the goal or to achieve a new goal – “Kaizen”.
  - Make efforts to challenge and improve upon the standards.

“Reaching”

“Maintaining”

“Raising”

New Goal

Goal

Maintenance Kaizen

Kaizen
Toyota Business Practices (TBP)

Concrete Actions and Processes

1. Clarify the Problem
2. Break Down the Problem
3. Target Setting
4. Root Cause Analysis
5. Develop Countermeasures
6. See Countermeasures Through
7. Monitor both Results and Processes
8. Standardize Successful Processes

Drive and Dedication

- Customers First
- Always Confirm the Purpose of Your Work
- Ownership and Responsibility
- Visualization (MIERUKA)
- Judgment Based on Facts
- Think and Act Persistently
- Speedy Action in a Timely Manner
- Follow Each Process with Sincerity and Commitment
- Thorough Communication
- Involve All Stakeholders
Deepening Cycle of Learning and Commitment
Family and Community Focus
Relationship with Members &
The Company

• A Caring Company
  ✓ Flower Fund
  ✓ Grief Committee
  ✓ Birthday Cards
Family and Community Focus
Relationship with Members & The Company

- Eliminating Social Distinctions
  - Same Dress Code (Uniforms)
  - Same Parking Lot
  - Same Restrooms
  - Same Lunch Room
  - Open Offices
Teamwork

- Organizational Structure
- Span of Control
- Horizontal and Vertical Alignment
Teams and Work Groups are Basic Unit of Toyota Organization

Daily Management System
- 5 minute meetings
- Visual Tracking
- 5S Audit
- Standard work Audit
- Problem ID/Data collection during shift
- Problem solving teams after shift

Group Objectives
- Achieve Annual Hoshin
- Perfect Safety
- Perfect Quality
- Reduced Cost
- Improve Productivity
- Daily Kaizen

Inputs Customer Value

Safety
HR
Quality
TPS
Maintenance
Engineering

SUPPORT SYSTEMS
Matrix Organization

(PRODUCTS X FUNCTION)

Manufacturing Departments

POWERTRAIN
PAINT/PLASTICS
BODY
GENERAL ASSEMBLY
PURCHASING

FUNCTIONAL DEPARTMENTS

Quality Control
Cost Control
Production Control
Legal
Safety
Human Resources

IN-HOUSE PRODUCTS
OUT-SOURCED PRODUCTS
ESI PROGRAM
Early Symptom Intervention

T/M must go to IHS

First Prevention, then ID abnormality at first opportunity
## Example symptoms in hands and wrist

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Postures/ movements</th>
<th>Forces/loads</th>
<th>Check for</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pins &amp; needles/numbness to the medial aspect (little finger side) of the hand/finger</td>
<td>Prolonged flexion or extension of the wrist</td>
<td>Hammering with hand pressure around the base of the thumb or side of hand</td>
<td>Poor parts fit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Tool not used or unavailable</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>No fixtures to hold work steady e.g. pushing in fuses while holding box</td>
</tr>
</tbody>
</table>
Example Ergonomic Guideline for Push Force for Part Assembly

<table>
<thead>
<tr>
<th>Item</th>
<th>Sketch</th>
<th>Criteria</th>
<th>Purpose</th>
<th>Design Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Push with thumb</td>
<td><img src="image" alt="Sketch" /></td>
<td>Pushing with thumb where surface area $&lt;30\text{mm}^2$ (approx area of a finger tip). If a digit cannot be supported, a limit of 1 kg push is recommended.</td>
<td>The structure of the finger/thumb tips is not suitable for absorbing high contact stresses, which can result in injury to the nerves, tendons and ligaments.</td>
<td>Where forces exceed guideline alternatives may be to reduce the required force or to improve the grip or surface area so greater force may be generated safely.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Should Not Exceed</th>
<th>Ideal Value</th>
<th>Typical Part/Example</th>
<th>Measurement Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>¾ 3 kg</td>
<td>≤ 1 kgf</td>
<td>Single clip Grommet</td>
<td>Measured using a push/pull gauge or load cell. Measure should reflect as closely as possible production conditions such as time required to complete &amp; line of force</td>
</tr>
</tbody>
</table>
ESI Operating Guideline

### Summary of Key Steps

<table>
<thead>
<tr>
<th>Step Description</th>
<th>Timing</th>
<th>Lead</th>
<th>Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>T/m first report of discomfort/difficulty</td>
<td></td>
<td>T/M</td>
<td></td>
</tr>
<tr>
<td>Initiate New Case and gather basic information</td>
<td>≤ 24 hours</td>
<td>G/L</td>
<td>T/M</td>
</tr>
<tr>
<td>Investigation</td>
<td>≤ 2 working days</td>
<td>G/L</td>
<td>ESI</td>
</tr>
<tr>
<td>Countermeasure Plan</td>
<td>≤ 5 working days</td>
<td>G/L</td>
<td>ESI</td>
</tr>
<tr>
<td>Countermeasure Implementation Short term/temporary</td>
<td>≤ 10 working days</td>
<td>G/L</td>
<td>Sect Mgmt</td>
</tr>
<tr>
<td>Assessment by Rehab Consultant for all cases open &gt;10 days completed by no later than Day 15*</td>
<td>&gt;10 ≤ 15 working days</td>
<td>Rehab</td>
<td>ESI</td>
</tr>
<tr>
<td>Countermeasure Implementation</td>
<td>≤ 20 working days</td>
<td>G/L</td>
<td>Sect Mgmt</td>
</tr>
<tr>
<td>Countermeasure Confirmation</td>
<td>≤ 20 working days</td>
<td>T/M</td>
<td>ESI/G/L</td>
</tr>
</tbody>
</table>

* Up to the 10th day assessment by the Rehab Consultant is optional. All cases open greater than 10 days must be assessed before the 15th day.

### Definitions

ESI Case Š T/M who has reported signs of discomfort/difficulty as the result of cumulative stresses.
ESI Team Š A t/m or t/mÕ designated by a sectionÕ management to support the ESI Program.
Rehab Consultant Š A medical provider assigned to support the ESI Program.
Cumulative Injury Š Injury or disorder arising over time from repeated exposure to physical stressors.
Acute Injury Š Injury resulting from a single traumatic event.
(Source: Internal TMMK Document on Operating Procedures for ESI)
Two Way Communication

- Company Communicating to Members
- Members Communicating with the Company
- Members Communicating with each other
# Types of Meetings and Standard Frequency and Length

<table>
<thead>
<tr>
<th>Management Level</th>
<th>Meeting Type</th>
<th>Frequency/Length</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>TL</td>
<td>KYK</td>
<td>Daily/5 minutes</td>
<td>Safety</td>
</tr>
<tr>
<td>GL</td>
<td>Huddle</td>
<td>Daily/5 minutes</td>
<td>KPI &amp; discussion</td>
</tr>
<tr>
<td>GL</td>
<td>Lunch Box</td>
<td>Monthly/1 hour</td>
<td>Identification and PDCA of group issues with assignment and tracking</td>
</tr>
<tr>
<td>Asst. Manager and Plant Manager</td>
<td>Town Hall</td>
<td>Monthly/1 hour</td>
<td>State of the Department and open discussion, with tracking the countermeasures of identified issues</td>
</tr>
<tr>
<td>Asst General Manager and General Manager</td>
<td>Lunch Box</td>
<td>Monthly/45 mins</td>
<td>A random selection of 5-6 team members at a time to build relationships and ID and resolve issues.</td>
</tr>
<tr>
<td>VP and President</td>
<td>Roundtable</td>
<td>Quarterly/90 mins</td>
<td>A random selection of all team members, with 25-30 members at a time, meeting with the President for sharing of company information and open discussion to ID member issues</td>
</tr>
</tbody>
</table>
Model of Effective Two-Way Communication

1. Goals and Gaps
2. Cultivate Ideas
3. Monitor and Measure
4. Reflect, Review and Revisit Plan

Relationship

- Continuous Improvement
- Respect for People

Me

You

Mutual Trust and Respect

Personal Boundary

Personal Boundary
Toyota Way Leadership

- Servant Leadership
- System of Checks and Balances
- Values Report Card
- Peer Review Process
Servant Leadership

Leadership develops the capacity that allows team members to improve what needs to be done

Suppliers ------ Team Members -------- Customers

Team Leaders
Group Leaders
Asst Manager and Manager
Asst & General Manager
Vice President
President
Manpower/Philosophy

The purpose of Human Resources is to embody management, that respects people creating continuous prosperity, for the company.
Role of HR
Fair & Consistent Policies and Practices

• Ensure no favoritism
• Maintain work discipline
• Consistent and Fair discipline
• Controlled attendance
• Check Action – Trust Audit
Recognition & Corrective Action

- Company and supervisor recognizing quality work
- Trust economy vs. Entitlement Economy
- Company recognizing sub standard work or unfair work practices and addressing it
- Members having the ability to recognize sub standard performance and unfair work practices and getting it addressed (checks and balances)
Wage & Benefit Philosophy

• Support employment security
• Stable pay program – avoid fluctuations
• Remain competitive within the industry
• Reflect overall company performance
• Promote & reward continuous improvement
## Comparison between MBO and Hoshin Kanri

<table>
<thead>
<tr>
<th>Management by Objectives</th>
<th>Hoshin Kanri</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Results Oriented Evaluation of Effort</td>
<td>• Concerned with both Results and Process of getting those Results</td>
</tr>
<tr>
<td>• Top down Communication</td>
<td>• Top down Direction Setting and Bottom-up flow of Information and means</td>
</tr>
<tr>
<td>• Directive</td>
<td>• Participative</td>
</tr>
<tr>
<td>• Primarily Authority Oriented</td>
<td>• Primarily Responsibility Oriented</td>
</tr>
</tbody>
</table>
Comparison between MBO and Hoshin Kanri (cont.)

<table>
<thead>
<tr>
<th>Management by Objectives</th>
<th>Hoshin Kanri</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Linear-A one shot Image of effort to reach the Goal (No feedback, no second chance, just start over from scratch each time)</td>
<td>• Circular/spiral image of how to reach a Goal (Add feedback loop and chance for improvement)</td>
</tr>
<tr>
<td>• Focus primarily on Targets</td>
<td>• Consider entire situation (Target and Means)</td>
</tr>
<tr>
<td>• Focus on Control of Resources, People, and Results</td>
<td>• Focus on checking on Process, Control of Resources and Development of People to get Results</td>
</tr>
<tr>
<td>• Seeking Information relating to Outcomes when checking</td>
<td>• Seeking Information relating to what has happened when checking</td>
</tr>
</tbody>
</table>
Hoshin Kanri= Direction Management

Hoshin Kanri=

Company Hoshin

Respect for people shown by contribution to company business

Contributing to upper Hoshin

Breakdown of Hoshin

Vertical Alignment

Horizontal Alignment

OJDOJD

P/S

Function Hoshin

Division Hoshin

Department Hoshin

Individual Priority Themes
Company Hoshin (for Long-term Prosperity)

Hoshin Kanri

Problem Solving

The Origin of Toyota’s Strength

OJD
Visual Management System

• A comprehensive system that aligns floor management and development activities to achieve company targets by:

  - Aligning Hoshin shop floor activities with Hoshin goals/objectives

  - Visually demonstrating:
    - The management condition of the shop.
    - Alignment of daily activities to Hoshin targets.

  - Promoting two-way communication, creating the environment to:
    - Address abnormal conditions through targeted problem solving.
    - Determine needed support and resources.
    - Develop team members.
VMS Components

• Effective Shop Floor Management
  ▪ Focuses on building an effective, visual management system to help the group achieve Hoshin targets.

• Team Member Skill Development
  – Activities and tools to help develop TMs capabilities to perform STW and achieve daily production goals with safety and quality.
Team Board for Floor Management Development System
Quality Section of Team Board for Floor Management Development System
## Building the Human System Model in Your Organization

<table>
<thead>
<tr>
<th>What</th>
<th>How</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use Lean Projects as a Vehicle for Developing People and Culture</td>
<td>Sensei role is to challenge, support and teach by challenging student, not doing the projects. Projects must be viewed as teaching tool, not simply ROI.</td>
</tr>
<tr>
<td>Build deep models, while spreading tools broadly</td>
<td>Must commit to certain processes or mini-value streams to go deep building a system and developing people, while applying tools more broadly.</td>
</tr>
<tr>
<td>Senior leaders take a serious look at themselves and their motives</td>
<td>Senior leaders must change before they can expect others to change--requires reflection, offsites, leadership coaching.</td>
</tr>
<tr>
<td>Develop Daily Management Systems starting in the models then spreading</td>
<td>A minimum of stability and TPS tools must be in place before the supervisors can be coached to the point of establishing a daily management system.</td>
</tr>
<tr>
<td>Change supporting HR systems at first to eliminate barriers to development</td>
<td>Start with very targeted changes in HR system such as job instruction training, adding broader metrics and eliminating those obviously conflicting with lean systems, eliminating obvious disincentives in reward system, and adding symbolic awards like awards and ceremonies.</td>
</tr>
<tr>
<td>As the lean effort and organization matures add in hoshin at a high level</td>
<td>Hoshin requires sound plans at the top that are challenging, yet achieveable and the problem solving capability to achieve the stretch targets. This requires a degree of maturity.</td>
</tr>
<tr>
<td>As the organization matures add supporting HR structures</td>
<td>Structural changes such as career planning, pay and benefit systems, systems for fair treatment, active HR roles in all promotions and pay increases should be carefully considered and gradually adapted to the local condition.</td>
</tr>
<tr>
<td>Continue reflecting, planning, and improving</td>
<td>The goal is to make this a natural part of the culture.</td>
</tr>
</tbody>
</table>
Traditional Company Approach to Lean Six Sigma Deployment

**Philosophy**
Lowest Unit Cost

**Reason**
Together lean and six sigma reduces inventory cost and operating cost

**Performance Measures**
Project ROI, Movement of KPIs. Total cost savings

**Principle**
Lean & Six Sigma reduce cost

**Strategy**
Deploy lean & six sigma initiatives across the enterprise

**Tools**
Lean and Six Sigma complementary tool kits

**Method**
Executives delegate to lean six sigma experts deploy lean projects

**Control Method**
KPIs tracked, management reviews, reports

**Effect**
Projects save $, but only localized impacts and only black belts develop

**Result**
Short-term cost savings, changes not sustainable, churning and instability of company and culture
Toyota Approach to Developing the Toyota Way

**Philosophy**
Kaizen & Respect for People

**Principle**
Quality People Continuously Improve System

**Strategy**
Quality People Value Stream

**Method**
Leadership hierarchy directly involved through teaching and coaching

**Reason**
Kaizen is the engine that drives competitive advantage

**Effect**
Kaizen by people in the process leads to continual organizational learning

**Result**
Continual Waste Reduction, Competitive Advantage, Mutual Prosperity

**Performance Measurement**
Safety, Morale, Quality, Cost, Delivery

**Key Lean Tools**
Std Work, JI Training, GPS, Floor mgmt system, Andon, Problem solving teams

**Control Method**
Visual Controls, on the floor audits & coaching, HR oversees fairness & equity
Toyota Method to Grow People and Improve Process

Learn (Plan) → Do → Think → Self-Learning → Teach

Repeat, no advance in thinking

Repeat, thinking ability advanced

Coaching From Sensei

Process Improvement (most think this is goal)

Sensei tests learning here by asking questions:
• What were challenges?
• How overcome?
• What other options?
• Why did it this way?
• What would you change?

Grow/Deepen Thinking

Deepen Learning

Leverage + Expand Capability (more results)

All Leaders Are Teachers

Sensei goal:
Develop leaders who deeply understand the philosophy + spread the concepts

Source: Developed by David Meier
Balance Deep Implementation and Broad Exposure in Lean Transformation

Spread Lean Across the Organization

Develop Depth of Capability Within the Organization
For more information contact

Mike Hoseus
President, Lean Culture Enterprises
mike.hoseus@gmail.com
859-699-2235