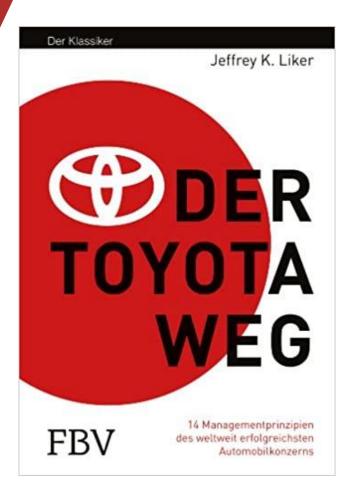


The toyota management system

# **GUIDING PRINCIPLES AND MAIN TOOLS**

Leipzig, 22.06.2021 Toni Pfeiffer

# INTRODUCTION





 Toyoda Sakichi (jap. 豊田 佐吉; \* 14. Februar 1867 in Kosai; † 30. Oktober 1930)

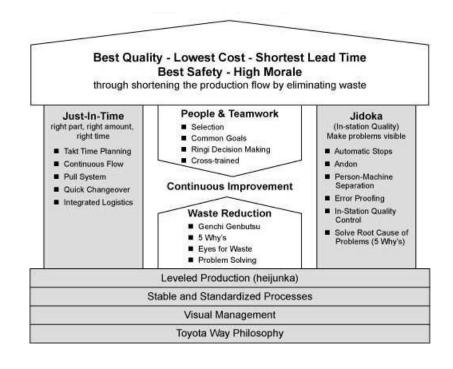
• Toyoda Kiichirō (jap. 豊田 喜一郎; \* 11. Juni 1894; † 27. März 1952)

 Toyoda Eiji AC (jap. 豊田 英二; \* 12. September 1913 in Kinjō, Nishikasugai-gun ;† 17. September 2013 in Toyota)

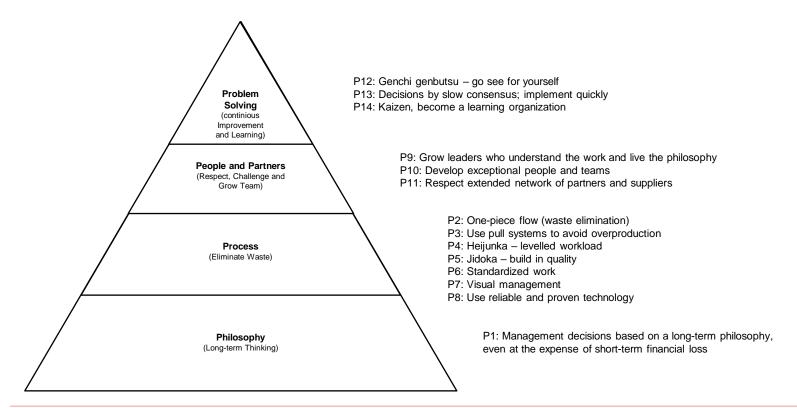
 Ōno Taiichi (jap. 大野 耐一; \* 29. Februar 1912 in der Mandschurei; † 28. Mai 1990)



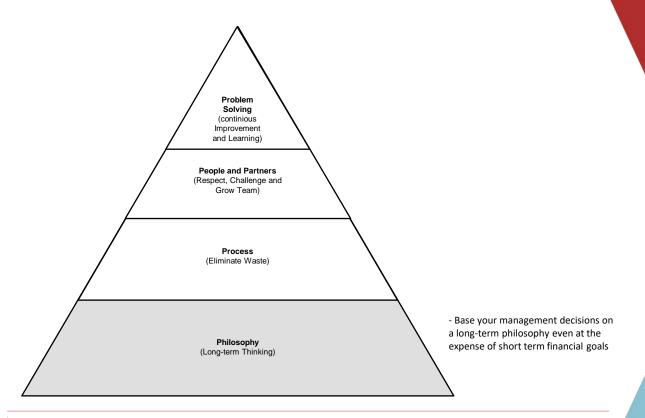
# TOYOTA PRODUCTION SYSTEM



## **4 PRINCIPLES BY LIKER**



# 1. PHILOSOPHY



#### 1. LONG-TERM PHILOSOPHY

- 1. We **honor** the language and spirit of each country's legislation and pay attention to open and fair corporate activities in order to be a good citizen of the world community.
- 2. We **respect** the customs and traditions of each country and contribute to economic and social development through corporate activities in our respective local communities.
- 3. We are **committed** to environmentally sound and safe products and to improving the quality of life, at each site and in all our activities.
- 4. We **invent** and **develop** advanced technologies and provide outstanding products and services that meet the needs of our customers worldwide.
- 5. We **promote** a corporate culture that enhances the creativity of each individual and the value of teamwork, while building mutual trust and respect between the workforce and management.
- 6. We **pursue** growth in harmony with the global community, through innovative management.
- 7. We **work with business partners** in research and development to create stable, long-term growth and mutual benefit, while keeping ourselves open to new partnerships.

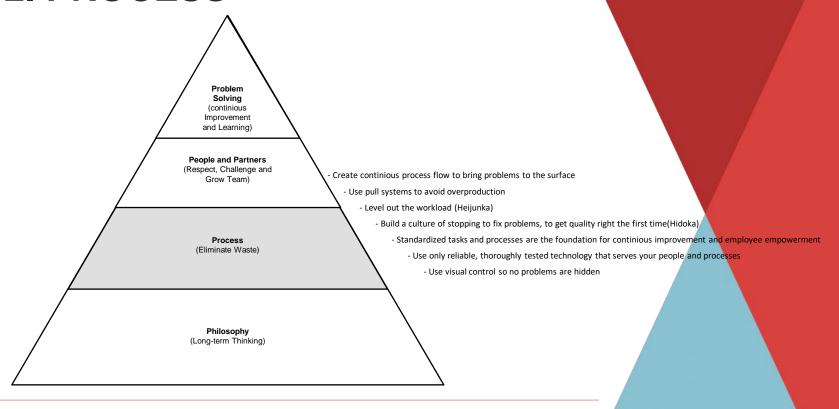
#### Toyota Motor Manufacturing North America MISSION

- As an American company, contribute to the economic growth of the community and the United States.
- As an independent company, contribute to the stability and wellbeing of team members.
- As a Toyota group company, contribute to the overall growth of Toyota by adding value to our customers.

#### Ford Motor Company MISSION

- Ford is a worldwide leader in automotive and automotiverelated products and services as well as in newer industries such as aerospace, communications, and financial services.
- Our mission is to improve continually our products and services to meet our customer's needs, allowing us to prosper as a business and to provide a reasonable return to our stockholders, the owners of our business.

# 2. PROCESS



## 2. ONE-PIECE-FLOW – ELIMINATION OF WASTE (MUDA)

• Overproduction <u>Benefits:</u>

WaitingBuilds in quality

Unnecessary transport
 Creates real flexibility

Overprocessing
 Creates higher productivity

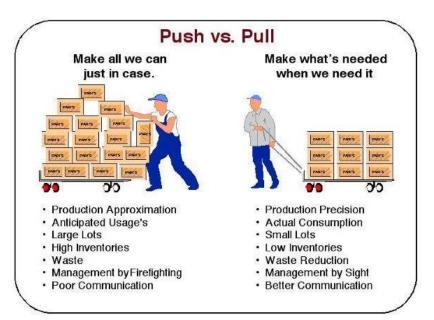
Excess invetory
 Frees up floor space

Unnecessary movement • Improves safety

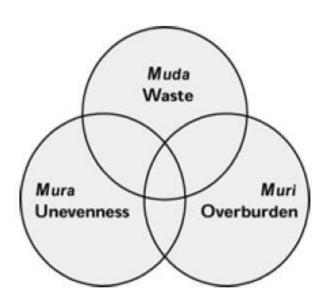
Defects
 Improves moral

Unused employee creativity • Reduces cost of inventory

## 3. PULL-SYSTEM



## 4. HEIJUNKA – LEVELLED WORKLOAD



- Change production plan
- Reduce waste
- Minimize changover time (like pit stop)
- Build-to-order -> Change-to-order
- Plan over all incoming orders

## 5. JIDOKA – BUILD IN QUALITY

- Go and see
- Analyze the situation
- Use one-piece flow and andon to surface problems
- Ask why? 5 times

## 6. STANDARDIZED WORK

## Taylor(1947):

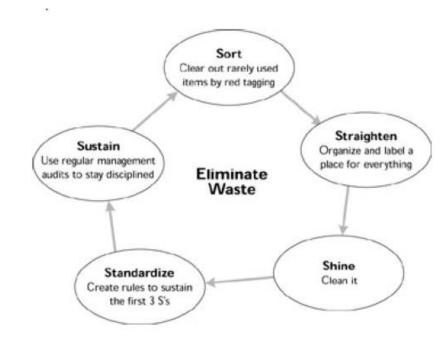
- Scientifically determining the one best way of doing the job.
- Scientifically developing the one best way to train someone to do the job.
- Scientifically selecting people who were most capable of doing the job in that way.
- Training foremen to teach their subordinates and monitor them so they followed the one best way.
- Creating financial incentives for workers to follow the one best way and exceed the performance standard
- scientifically set by the industrial engineer.

#### **Problems:**

- Paper war
- Tall, hierarchical organizational structures
- Top-down control
- Books and books of written rules and procedures
- Slow and cumbersome implementation and application
- Poor communication
- Resistance to change
- Static and inefficient rules and procedures

#### 7. VISUAL MANAGEMENT

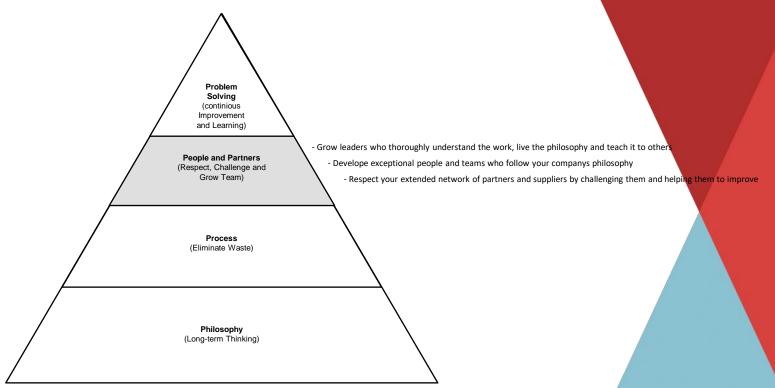
- 1. Sort(seiri) through items and keep only what is needed while disposing of what is not.
- 2. Straighten (seiton) A place for everything and everything in its place.
- 3. Shine (seiso) The cleaning process often acts as a form of inspection that exposes abnormal and pre-failure conditions that could hurt quality or cause machine failure.
- 4. Standardize (seiketsu) Develop systems and procedures to maintain and monitor the first three S s.
- 5. Sustain (shitsuke) Maintaining a stabilized workplace is an ongoing process of continuous improvement.



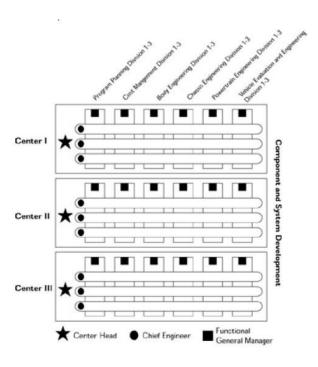
## 8. USE ONLY RELIABLE TECHNOLOGY

- Great analysis
- Pilot-area
- Principles (men over machine, consens, muda, stability, felxibility and reliability)
- Visual and intuitive
- Everyone is involved
- Engineer make decision

# 3. PEOPLE AND PARTNERS



## 9. LEADERS



- Being blessed by top executives at Toyota. The CE has the ear of these
  executives and they are committed to getting the CE the resources to succeed.
- Controlling the vehicle program. The functional groups where the engineers
  reside are all in support roles to the development process, which is controlled
  by the chief engineer and which is the birthplace of all the
- exciting new design programs.
- Leading the program. CEs are selected for this honorific position because of a
  history of excellence in leadership. Moreover, they get to do it again only if
  they are successful on the last program.
- Having proved that you are an exceptional engineer. You also rise to this
  position because you have demonstrated exceptional technical engineering
  capability. CEs have much broader training and exposure across several
  engineering specialties than most other engineers at Toyota.
- Being a critical link between engineering and customer satisfaction. Toyota
  has managed to build a culture of individuals focused on customer satisfaction
  and they recognize the CE as a critical link in that commitment.

### 9. LEADERS

- Focused on a long-term purpose for Toyota as a value-added contributor to society.
- Never deviated from the precepts of the Toyota Way DNA and lived and modeled themselves around this for all to see.
- Worked their way up doing the detailed work and continued to go to the *gemba* the actual place where the real added-value work is done.
- Saw problems as opportunities to train and coach their people.

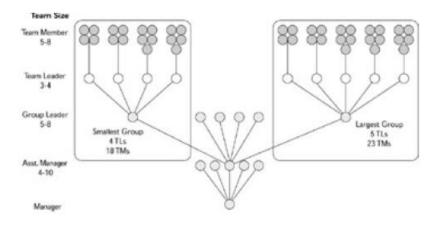


## 10. PEOPLE AND TEAMS

#### Blanchard(2000):

- Stage 1: Orientation. The group needs strong direction from the leader and must understand the basic mission, rules of engagement, and tools the members will use.
- Stage 2: Dissatisfaction. The group goes to work, which is a lot less fun than talking about great visions of success, and the members discover it is harder than they thought to work as a team. In this stage, they continue to need strong direction (structure) from the leader but also need a lot of social support to get through the tough social dynamics they do not understand.
- Stage 3: Integration. The group starts to develop a clearer picture of the roles of various team members and begins to exert control over team processes. The challenge is for the group to learn about roles, goals, norms, and team structure. The leader does not have to provide much task direction, but the team still needs a lot of social support.
- Stage 4: Production. The group puts it all together and is functioning as a high-performing team with little task support or social support from the leader.

## 10. PEOPLE AND TEAMS



#### Team Member (TM)

- Perform work to current standard
- Maintain 5S in their work area
- Perform routine minor maintenance
- Look for continuous improvement opportunities
- Support problem-solving small group activities

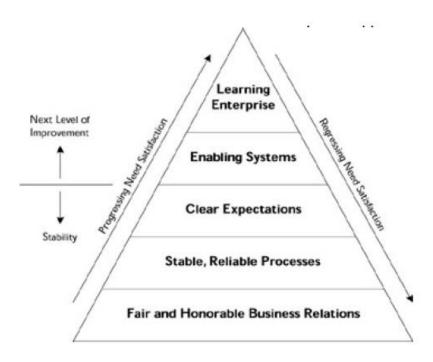
#### Team Leader (TL)

- Process start-up and control
- Meet production goals
- Respond to andon calls by TM
- Confirm quality—routine checks
- Cover absenteeism
- Training and cross-training
- Work orders for quick maintenance
- Insure standardized work is followed
- · Facilitate small group activities
- On-going continuous improvement projects
- Insure parts/materials are supplied to process

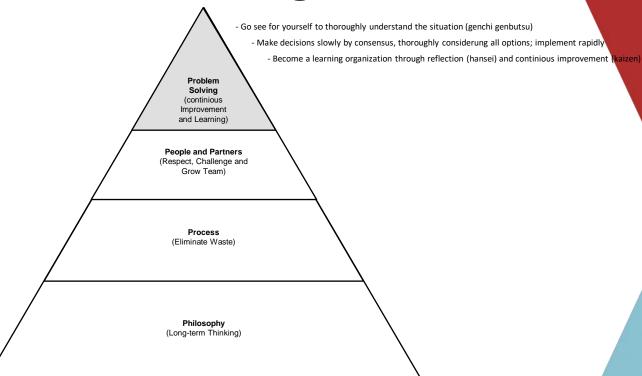
#### **Group Leader**

- Manpower/vacation scheduling
- Monthly production planning
- Administrative: policy, attendance, corrective actions
- Hoshin planning
- Team morale
- · Confirm routine quality and TL checks
- Shift to shift coordination
- Process trials (changes in process)
- TM development and cross-training
- Report / track daily production results
- Cost reduction activities
- Process improvement projects: productivity, quality, ergonomics, etc.
- Coordinate major maintenance
- Coordinate support from outside groups
- Coordinate work with up-stream and down-stream processes
- Group safety performance
- Help cover TL absence
- Coordinate activities around major model changes

## 11. NETWORK



# 4. Problem solving



#### 12. GENCHI GENBUTSU

- Get your own picture of the situation to understand it fully
- Ohno-circle

#### Always keep the final target in mind

- Carefully plan for your final target
- · Have a clear purpose for meetings

#### Clearly assign tasks to yourself and to others

Think and speak based on verified, proven information and data

- Go and confirm the facts for yourself (genchi genbutsu)
- You are responsible for the information you are reporting to others

Take full advantage of the wisdom and experiences of others to send, gather or discuss information (form of genchi genbutsu)

#### Share your information with others in a timely manner

- Always consider who will benefit from receiving the information
- Always report, inform and consult (Hou/Reng/Sou) in a timely manner
- Analyze and understand shortcomings in your capabilities in a measureable way
- Clarify the skills and knowledge that you need to further develop yourself

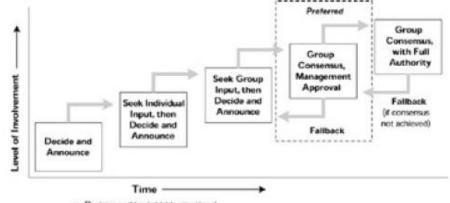
Relentlessly strive to conduct kaizen activities

Think "outside the box," or beyond common sense and standard rules

Always be mindful of protecting your safety and health

## 13. NEMAWASHI – MAKE DECISIONS SLOWLY

- 1.Finding out what is really going on, including genchi genbutsu.
- 2.Understanding underlying causes that explain surface appearances asking Why? five times.
- 3.Broadly considering alternative solutions and developing a detailed rationale for the preferred solution.
- 4.Building consensus within the team, including Toyota employees and outside partners.
- 5.Using very efficient communication vehicles to do one through four, preferably one side of one sheet of paper.



- . Decision making is highly situational
- Philosophy is to seek maximum involvement for each situation

#### 13. NEMAWASHI – MAKE DECISIONS SLOWLY

#### Meetings:

- Clear objectives prior to the meeting. These are sometimes reflected in an agenda, but the agenda needs to be very focused on clear tasks and deliverables.
- The right people at the meeting. People expected to show up need to show up.
- Prepared participants. All participants know what they should prepare for the meeting and have done it.
- Effective use of visual aids. The A3 format is extremely effective.
- Separate information sharing from problem solving. Share information as much as possible prior to the meeting so that the focus of the meeting can be on problem solving.
- The meeting starts and ends on time.

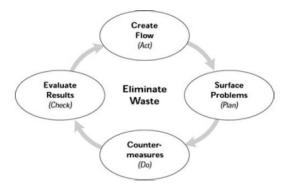
#### Benefits:

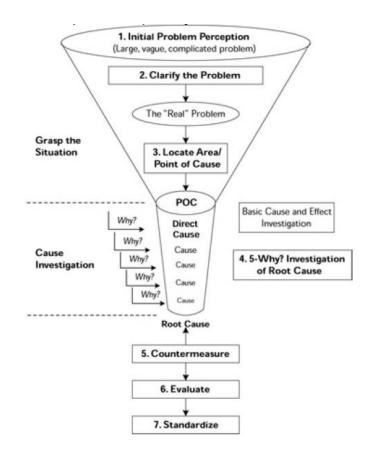
- It uncovers all the facts that, if not considered, could lead to a great deal of pain and backtracking further down the road. Execution tends to be flawless by most standards.
- It gets all the parties on board and supporting the decision so any resistance is worked out before implementing anything. The cost of addressing this resistance when implementation begins is likely to be many times the cost of addressing it in the planning stage. Dick Mallery could not believe that every concerned party, even Toyota s opponents, ended up thanking Toyota for solving their problems.
- It achieves a great deal of learning up front before anything is even planned or implemented.

## 14. KAIZEN AND HANSEI

#### 3 measurements:

- 1.Global performance measures how is the company doing?
- 2.Operational performance measures how is the plant or department doing?
- 3. Stretch improvement metrics how is the business unit or work group doing?







# **THANK YOU!**