



Key factors in kaizen implementation: Leadership and Visualization

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30th November 2012, 15:00-17:00
TKP Sibuya Conference Centre

Introduction

- Worldwide diffusion of the concept of *kaizen*
- Not only manufacturing but also service companies globally have tried to implement *kaizen*.
- Differences in *kaizen* implementation between Japan and other countries (*kaizen* and *lean*)
- ➡ Successful *kaizen* implementation depends on context
- One of the key factors should be how to connect PDCA at the company level to PDCA at the *gemba* (shopfloor) level.
- Leadership and *mieruka* (visualization) play an important role.

What is Kaizen

改善 = improvement → Kaizen (Imai, 1986)

カイゼン Kaizen = a concept or method for improving business practices

- Toyota is considered to be the most successful company that implements *kaizen* activities in Japan.

“If I can say just one unique character of Toyota, it is that everyone understands that *kaizen* has no end.”



Fujio Cho,
Chairman of
Toyota

- *Kaizen* activities are not just a project or program for improving production processes.

“Improvement is both eternal and infinite.”



Taiichi
Ohno

- *Kaizen* is not just making things better. Here, human wisdom should be used without spending much money.

“Use your wisdom, not money, Bakayaro!”



Mick
Muraoka

What is Lean

Lean = to eliminate waste (or *muda*) as much as possible

7 wastes (*muda*) by Taiichi Ohno

Transportation, Inventory, Motion, Wait, Over-processing, Over-production, Defect

How to eliminate wastes:

to develop systems or methods ⇒ focus much attention in
“*Lean*” (Western approach)

to develop people or atmosphere ⇒ focus much attention in
“*Kaizen*” (Japanese approach)

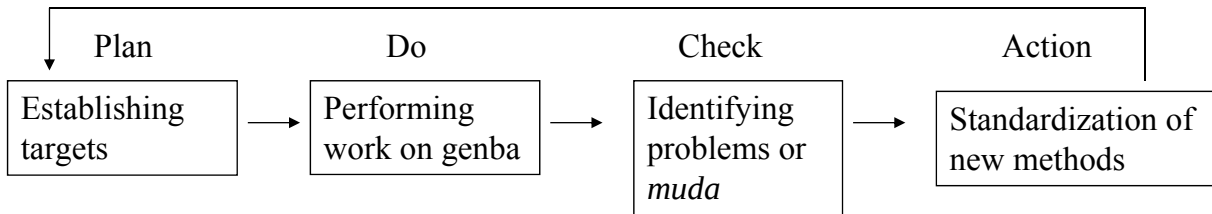
- *Kaizen* is not just a business method known as *lean*

→ The importance of developing people and atmosphere

Kaizen activities

Kaizen cycle and the importance of *gemba*

Muda elimination (Ohno, 1988; Imai, 1997)



- It is impossible to identify problems or *muda* without going to *gemba*.

⇒ Sengen-Shugi

- *Gemba* must be always clean and tidy so that *muda* is easily noticeable.

⇒ Mieruka (visualization), 5S

- It is important for workers to have an ability and opportunity for finding seeds of *kaizen* through day-to-day operations.

⇒ Multi-skilled workers, Quality circles, Suggestion schemes

What is Sengen-Shugi

現場

Gemba
(actual place)

現物

Gembutsu
(actual thing)

現実

Genjitsu
(reality)

- People should go to *gemba*, see *gembutsu*, and comprehend *genjitsu*



Carlos Ghosn's
gemba visit

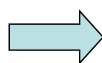
Find

Seeds of *kaizen*

Create

What is Mieruka

見える化



To visualize something important

E.g.

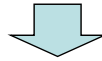
Visualization of waste or problems, results, management conditions, production processes, customer needs, experience etc.



Toyota's Andon board as an example of *Mieruka*

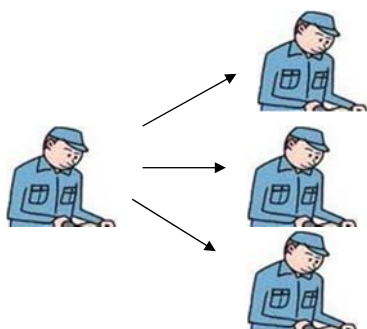
What is 5S

整理	整頓	清掃	清潔	躰
Seiri	Seiton	Seiso	Seiketsu	Sitsuke
(Sort)	(Straighten)	(Scrub)	(Systematize)	(Standardize)
(ClearOut)	(Configure)	(Clean & Check)	(Conformity)	(Custom & Practice)



Creating a *gemba* culture in which workers always create and find the seeds of *kaizen*

What is multi-skilled workers



- Able to know the link between different jobs
- Able to find problems in other jobs
- Able to help other workers
- Able to ensure quality by themselves
- Able to responsible for their job

What is quality circles

- Regular-based voluntary problem solving activities by *gemba* workers
- The theme of this activity is decided by participants themselves.
- Not only countermeasures to problems but also collaborative attitudes are aimed to be created.
- Circles are implemented based on the PDCA cycle using QC stories.

What is suggestion schemes

- A certain number of suggestions is given to employees as a target.
- Suggestions are used for both creative and preventive purposes.
- Monetary rewards are given to employees who provide an effective suggestion



Creating opportunities not only for expressing their ideas but also for communication and mutual understanding

Visualization and SOPs

標準作業票 = Standard Operating procedures as routine

標準作業表 = Standard Operating procedures as visualization

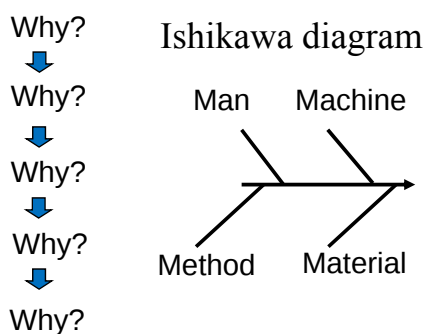
- Operators should follow SOPs, but SOPs as routine hide potential problems.



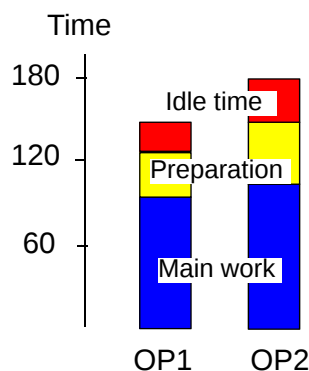
- SOPs as visualization should be created in accordance with environmental change.

What methods are used?

5 why analysis



Yamazumi chart



Why visualization is unsustainable?



Only engineers can use these methods



Gemba workers should be able to use these methods

Key roles and leadership in kaizen

What is the role of *gemba* workers?

➡ to find the seeds of *kaizen*

- The seeds include the problems and *muda* of their operations, and creative ideas for improvement.

What is the role of local supervisors?

➡ to manage the *kaizen* circle (PDCA) at *gemba* level

- This includes analyzing problems with workers, teaching workers how to find and analyze problems, implementing *kaizen* ideas with workers, and asking for cooperation with managers and specialists.

What is the role of top leaders?

➡ to manage the PDCA at company (or plant) level

- This includes giving *gemba* people full recognition to the significance of *kaizen* implementation, and linking *gemba kaizen* to the goal of whole organization.

Linking gemba kaizen to the company goal

Financial condition; Market condition; Customer needs; Rival plants

Management level

Main actor: Senior executives (MD)

How to connect management and gemba PDCA

Mediator: Section managers (*Kacho*)

Quality concern; Staffing; A gap between planned and actual situations

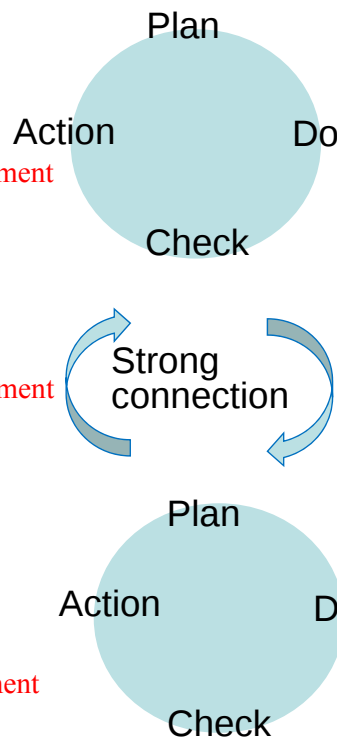
Gemba (Shopfloor) level

Main actor: Team leaders

Strong commitment

Strong commitment

Strong commitment



PDCA: company (or plant) level

- Mid-term or annual base
- Monthly meeting among senior managers
- Annual meeting for sharing targets
- Rating systems, Mid-term business planning

Mediating activities

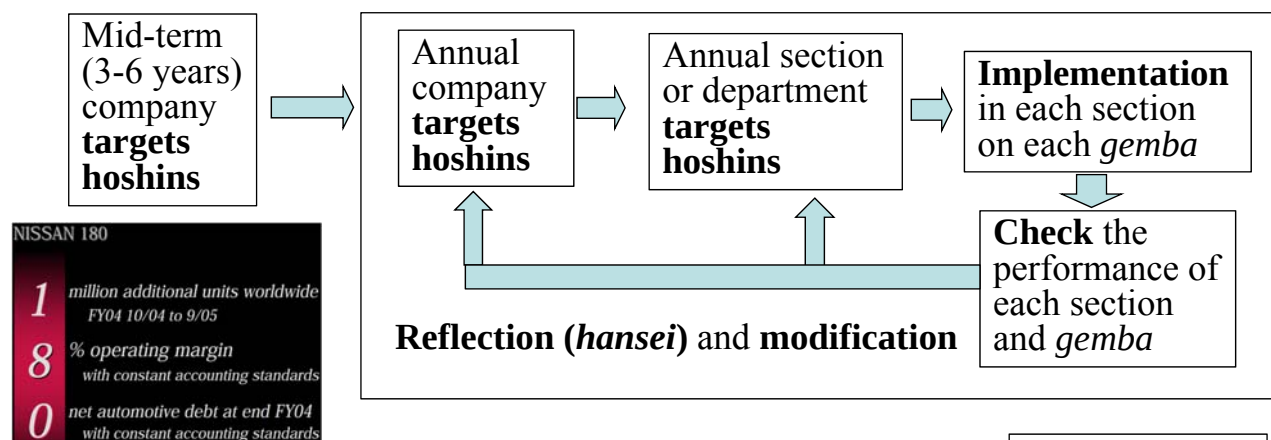
- Senior executives' plant visits
- *Asakai* (daily managers meeting)

PDCA: *gemba* level

- Daily base
- Daily briefing in a production team
- PCB, Andon, SOPs, *Akafuda* (Red Tag) practice, *Kaimishibai* card (Daily checking), *Henkaten* meeting

What is hoshin kanri?

Hoshin kanri, policy deployment, is a method for connecting PDCA at company level to PDCA at *gemba* level by focusing all employees on the goals of the company.



- In Japan, managers (*kacho*) make their section *hoshin*.

➡ Alignment between company and section *hoshins* is the key

- Actual performance should be visualized using graphs and tables

- Top leaders should regularly check the performance on *gemba*

Managers' Capability for creating *hoshin* should be developed

Cases of kaizen and leadership

Field research on kaizen implementation

- Time: from 1999 to 2012
- Research visits: more than 200 business sites
- Area: Japan, UK, China, US, Germany, etc. (more than 10 countries)
- Industry: mainly automotive, auto-parts
- Data collection: interviews, factory observations, etc.

Three cases

- NS Co.: A case of Welsh plant
 ⇒ *Mieruka (visualisation) of the stock status*
- GS Co.: A case of Japanese plant
 ⇒ *Hoshin kanri*
- MJ Co.: A case of Chinese plant
 ⇒ *Sangen-Shugi and leadership*

A case of Mieruka (NS Co.)

NS Co.

- A Welsh joint venture between two Japanese auto-parts makers
- Number of employees: 160
- Located in South Wales
- Main customer: a Japanese auto-maker in Europe

Backgrounds

- Shifting blame to the Japanese head offices by the local employees
- Problem of parts shortages
- Problem of the computer-based systems: Stock control, production planning, and production control systems

⇒ Nobody minded if there were differences between the data in each system.

Differences between



and



A computer system is not everything!

A case of Mieruka (NS Co.)

Manual production control system (PCS)

- Prohibition of the use of the computer-based PCS (imported from Japanese head office)
- Actually going to *gemba* and collecting information on stocked parts and production volumes
- Writing down these data on a large table on the wall

→ Local staff are able to understand and control the PCS.

At the beginning the MD went to *gemba* and collected information with PC staff

Computer-based PCS



- The Japanese head office creates the PCS.
- Local staff only input the data into the system.

Manual-based PCS



- Local staff creates the PCS.
- The aim is changed from just inputting data to solving parts shortages on *gemba*.

A case of Mieruka (NS Co.)

Creation of supportive contexts

- Empowerment: The delegation of authority from Japanese staff to local employees
- Indirect cover: Indirect staff work on *gemba* with direct operators to make up for absentees.
- Cleaning rotor: Indirect staff share the responsibility to clean the shop floor with direct operators.

The MD took the lead in working and cleaning with direct workers on *gemba*

Results

- Elimination of parts shortages
- Reduction of stocked parts to one fourth
- Active communication between direct and indirect staff

Implications

- The change from computer-oriented to *gemba*-oriented method allows **local employees to fully recognize the importance of solving real problems.**
- The importance of the creation of a context in which indirect and direct staff share the responsibility to improve their plant performance.

A case of Hoshin kanri (GS Co.)

GS Co.

- A Japanese automotive body maker
- Number of employees: about 1,000
- Located in Japan
- This plant has a long tradition to supply automotive bodies to Toyota and participated in Toyota's *Jisuken* programme.

Background

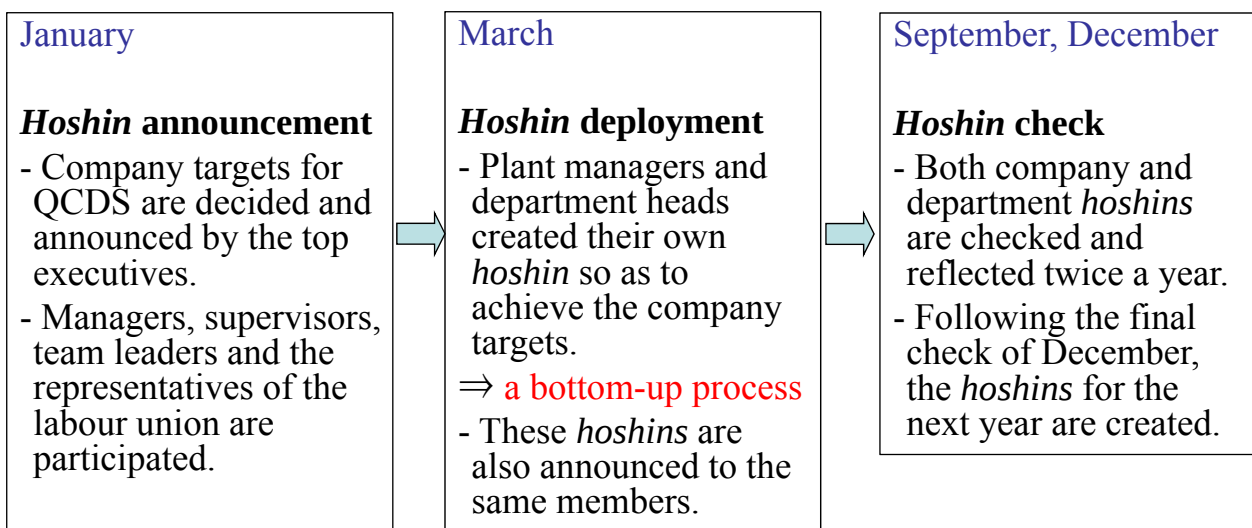
- Rapid increase in production volume
- Intensification of global competition in the automotive industry
- Increase in temporary workers, Brazilian workers in particular
- Simplification and standardization of work processes

⇒ *Kaizen based on employees' wisdom should be linked to hoshin*

Human wisdom is endless!

A case of Hoshin kanri (GS Co.)

Hoshin kanri of GS Co.



- In GS Co. every *kaizen* activity should be based on *hoshin*, so that *kaizen* activities are connected to the company goal and profit.
- This makes it possible for every employee who address *kaizen* to understand the purpose of *kaizen*.

A case of Hoshin kanri (GS Co.)

Hoshin kanri and gemba management

One question: If the *hoshin* check is done only in a meeting room among managers using PP slides, how these *hoshins* can be linked to *gemba* PDCA?

- On the *gemba* of GS Co. company and department *hoshins*, the time schedule for achieving *hoshins*, and *gemba* management items are all visualized.
- In order to strengthen such a link this company implemented a follow-up event on *gemba*, called *Jishu-Kenkyukai* every month.

Jishu-Kenkyukai

- Each shop, such as press or assembly, gives a presentation on the progress situation of *kaizen* every month.
- This presentation is not conducted in a meeting room, but on *gemba*.
- Each month the top leaders visit one *gemba* and actually check the progress situation by joining the *jishu-kenkyukai*.
- Shop managers have to show the actual progress situations to the top leaders, such as actually reducing the operators from 5 to 4.

Honest *gemba*



A case of Hoshin kanri (GS Co.)

Implications

- By giving opportunities for managers to make their own *hoshin*, they are able to fully understand the link between company targets and *kaizen* activities in their department or shop, and to explain the purpose of *kaizen* to their department members.

➡ It would be difficult to establish the link between company and *gemba* PDCA's only through a top-down policy deployment process.

Capabilities required for top leaders

- Top leaders should understand the link between company and *gemba* PDCA's, and be able to explain the purpose of *kaizen* to all employees.
- Top leaders should be able to coordinate company targets with department or shop targets.
- Top leaders should be interested in *gemba* and give insightful questions, useful suggestions and words of encouragement to *gemba* workers.

➡ Only *gemba* walk is meaningless.

In GS Co. *gemba* workers are praised by the top leaders. If some problems are found out, management should be blamed, not *gemba* workers.

A case of Sangen-Shugi (MJ Co.)

MJ Co.

- A Japanese transplant in China which makes pressed body parts
- Number of employees: about 700
- Located in Guangzhou
- Main customer: a Japanese related auto-maker in China

Backgrounds

- Rapid expansion of the Chinese automotive market
- Expansion of Japanese makers' production volume in China
- Difficulty for the Japanese makers to find local parts makers
- Japanese *keiretsu* makers which set up their transplants in China face exacting requirement

➡ to supply the same quality of auto-parts as those made in Japan at a cheaper price than in Japan

A case of Sangen-Shugi (MJ Co.)

Sangen-Shugi by the MD

- *Gemba* (actual place),
Gembutsu (actual thing), and
Genkohan (one is caught "red-handed" at the scene)

Explanations at the scene are able to get a better understanding of *genkohan*, and to create a trustful relationship between trainers and trainees.



Gemba of MJ Co. in China

- The MD goes around *gemba* for 2–3 hours every morning.
- The MD picks up rubbish on *gemba*.
- The MD lets local managers accompany him on *gemba* visits, asks questions to them, and tries to teach them how to coach the workers.

➡ 6 months later, local managers began to go around *gemba* on their own initiative.

A case of Sangen-Shugi (MJ Co.)

Creation of supportive contexts

- The MD gives local members hints about *kaizen*, not explicit directions.

In a noticeboard in this plant, there were 15 sheets of hints about *kaizen* written by the MD.



➡ Creating a situation in which local members can have experience of learning through mistakes

- Empowerment of team leaders
- Tool meetings: Cross-functional meetings for 30 minutes
- OJT (On the job training) for developing multi-skilled workers
- Internal promotion: All local managers have been promoted from within this plant.

A case of Sangen-Shugi (MJ Co.)

Results

- Implementation of a one-piece flow production system
 - Old situation: parts were separately supplied to each of the 6 work processes
 - New situation: parts for all 6 processes are prepared in a small box and supplied to the first work process

➡ The reduction of intermediate inventories and space reduction, “*majime*”

- External defect rate: 300-400ppm→15-20ppm in a year
- Operating profit rate: red figure→8% in a year

Implications

- Kaizen is the day-to-day practices of problem solving conducted through the everyday *gemba* visit in order to find *genkohan* as seeds for kaizen.
- It is possible for overseas transplants to outperform the Japanese mother plant.

Japanese plants can no longer always get the No.1 position in the world.

Implications

- Implications from the three cases
 - *Mieruka*: Differences between a computer system and actual situations
 - *Hoshin kanri*: Link between company and *gemba* PDCA's
 - *Sangen-shugi*: Trustful relationships between management and workers
- A healthy balance between visual control and empowerment
 - Manual-based PCS: It is local staff, not Japanese expatriates who created this system.
 - *Hoshins*: *Hoshins* are not only given by the top management, but also created by section managers.
 - *Kaizen* hints: *Kaizen* hints give workers opportunities to create their own ideas, not clear instructions.
- ➡ Put a lot of soul into things (tools for visual control)
 Again, *kaizen* is not the same as *lean*.

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Thank you for your attention

Any question is welcome

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