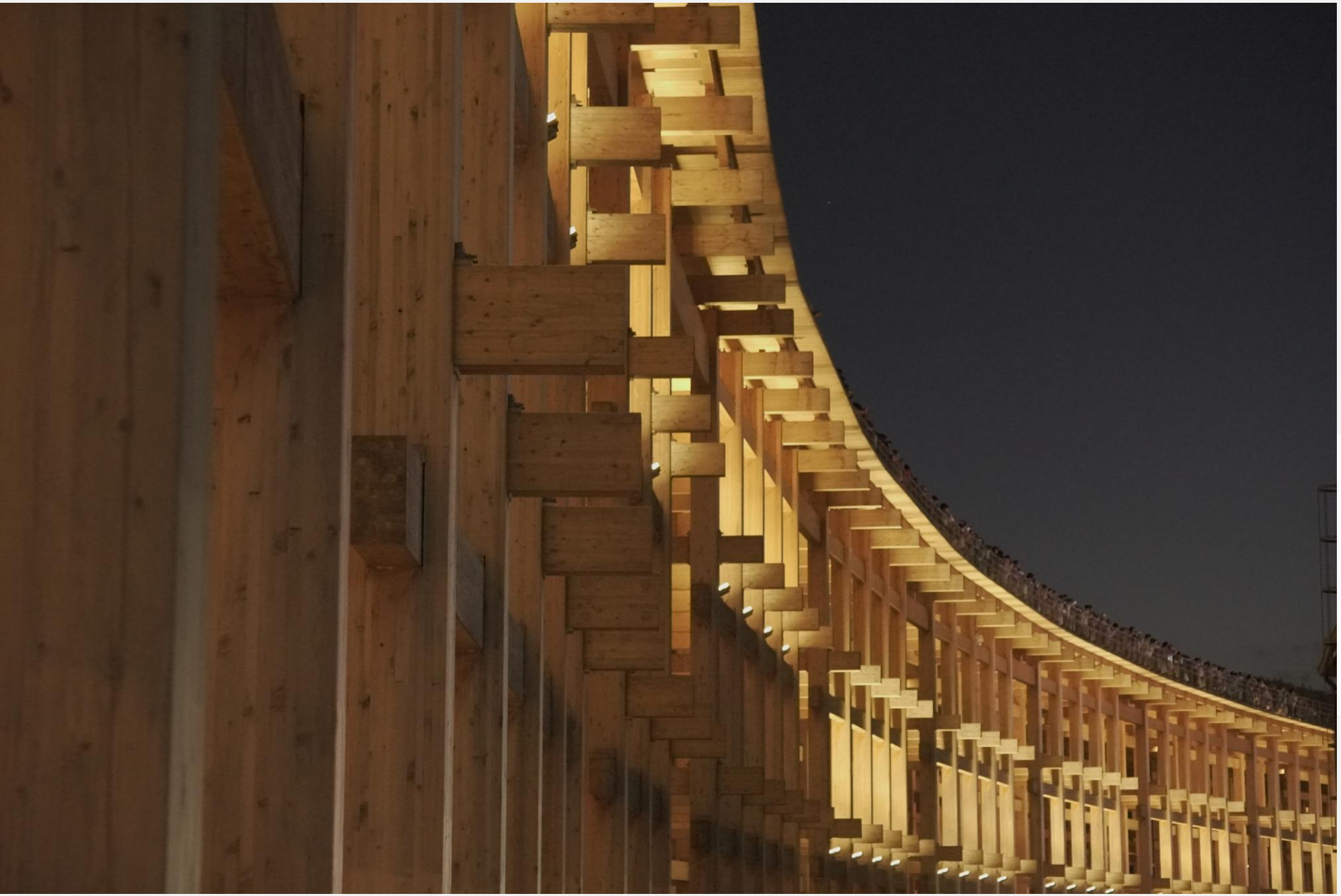


Japanese Mindset and Work Ethic

TOYOTA PRODUCTION MINDSET

It is production method based on the philosophy of achieving elimination of waste in production process in order to seek the most efficient production method.

TWO MAIN CONCEPT

1. JIDOKA It is translated as automation which means empower worker to identify problems and to take action in correcting problems at any stage of production process.

2. JUST IN TIME It means producing goods only what is needed, only when it is needed and only in the quantity that is needed.

MAIN OBJECTIVE 3M

Main goal is to get rid of overburden (Muri), inconsistency (Mura) and waste (Muda) in production process.

5S

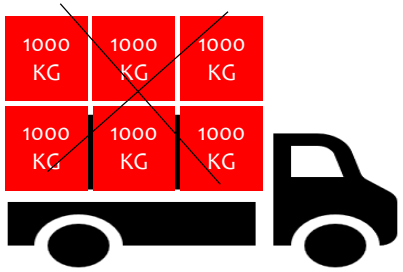
5S is a method to reduce waste and optimize productivity through maintaining an orderly workplace and using visual cues to achieve more consistent operational results. Implementation of this method "cleans up" and organizes the workplace basically in its existing configuration, and it is typically the first lean method which organizations implement.

- *Seiri:* To separate needed tools, parts, and instructions from unneeded materials and to remove the unneeded ones.
- *Seiton:* To neatly arrange and identify parts and tools for ease of use.
- *Seiso:* To conduct a cleanup activity.
- *Seiketsu:* To conduct *seiri*, *seiton*, and *seiso* daily to maintain a workplace in perfect condition.
- *Shitsuke:* To form the habit of always following the first four S's.

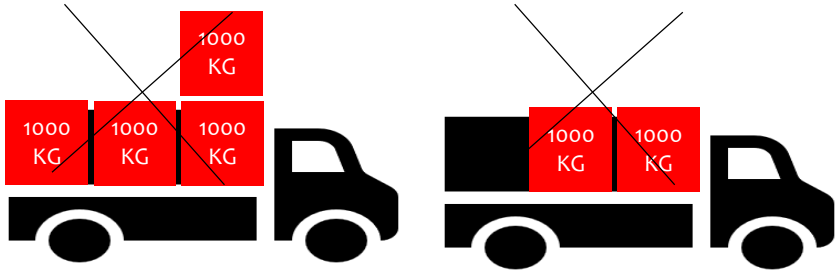
KAIZEN

Kai means change and Zen means for the better. It is a philosophy of continuous improvement that helps to ensure maximum quality, the elimination of waste, and improvements in efficiency, both in terms of equipment and work procedures.

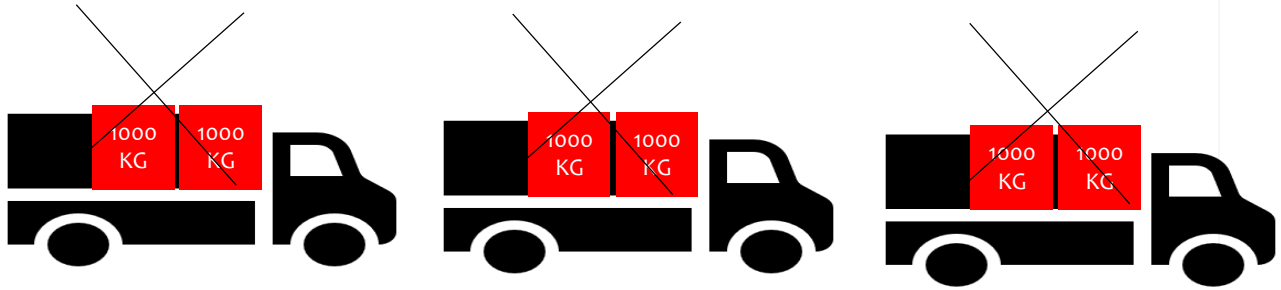
DEFINITION OF 3M



Muri = Overburdened



Mura = unevenness, fluctuated



Muda = waste

The Most optimized

Muri

"Beyond one's power" is an especially potent definition for muri, as it refers to employees or equipment that have been overburdened.

Mura

Mura refers to "unevenness" or "irregularity," specifically irregularity in production levels.

Muda

Means uselessness: wastefulness
Seven common types of waste are:

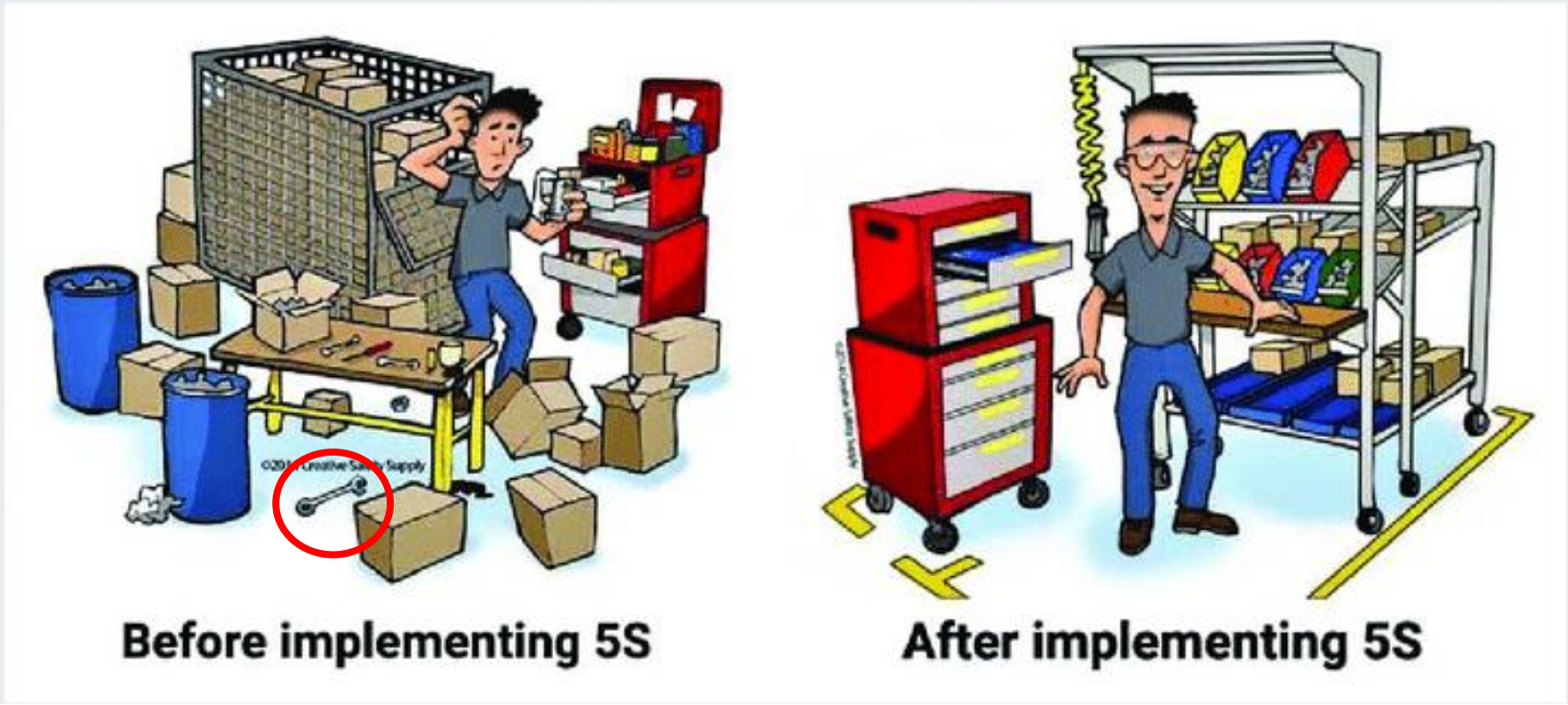
1. **Defects** occurring in the final product
2. **Waiting** for the next step in production to occur
3. Excess **motion** of people and equipment than is needed
4. Excess **inventory** that is sitting and taking up space
5. Overproduction means that manufacturing process is ahead demand
6. **Overprocessing** without creating value
7. Unnecessary **transport** or handling of materials

Before

- Tools are not stored inside tool box. It needs time to search tools. (Unnecessary handling)
- Items are not separated in workspace so you do not know items that you need or do not need. (Excess motion)

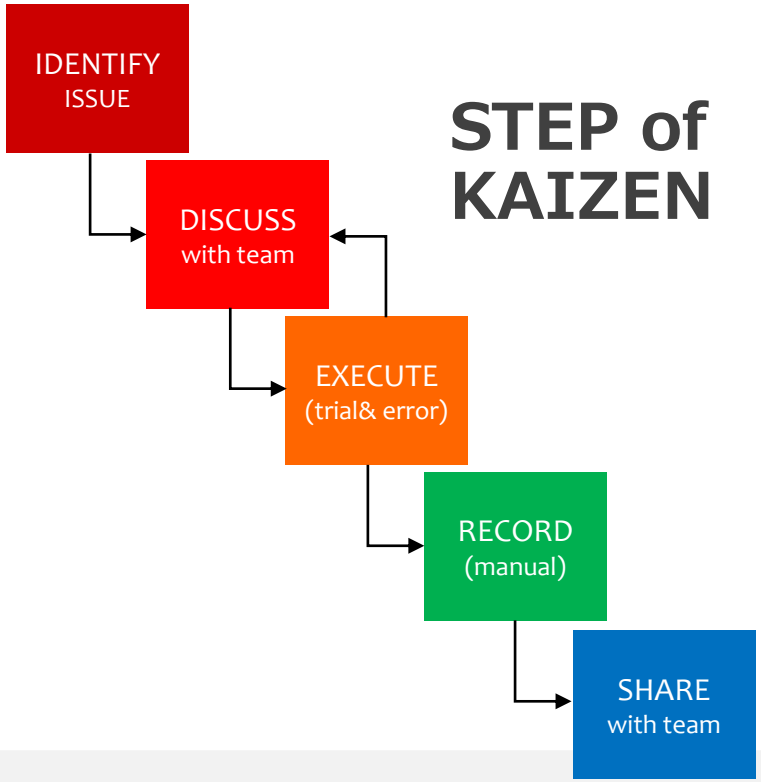
After

- Tools are stored inside tool box (Seiton). Everyone knows where to find tools.
- Items are organized in workspace. (Seiri).



KAIZEN (CONTINUOUS IMPROVEMENT)

- It is an approach to creating continuous improvement based on the idea that small, ongoing positive changes can reap significant improvements.
- Kaizen works hand-in-hand with standardized work. Standardized work captures the current best practices for a process, and Kaizen aims to find improvements for those processes.
- It is very important to record the kaizen work and to share the document to all member so that all member aware of it and put it on daily practice.

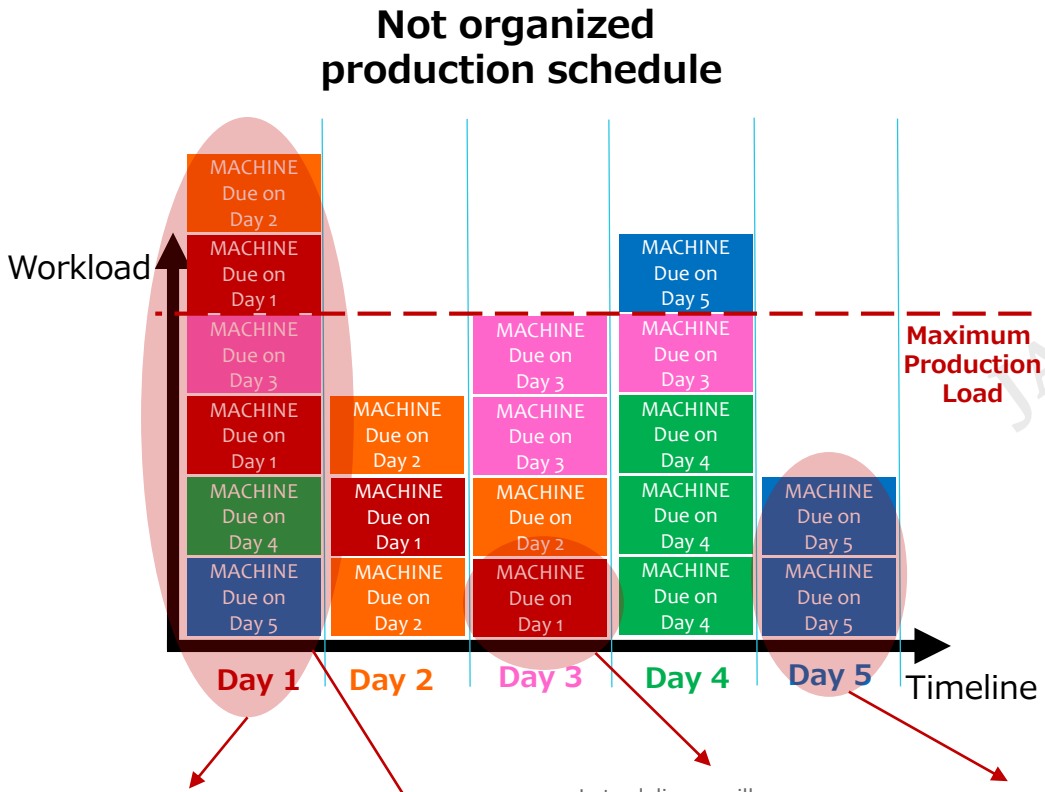


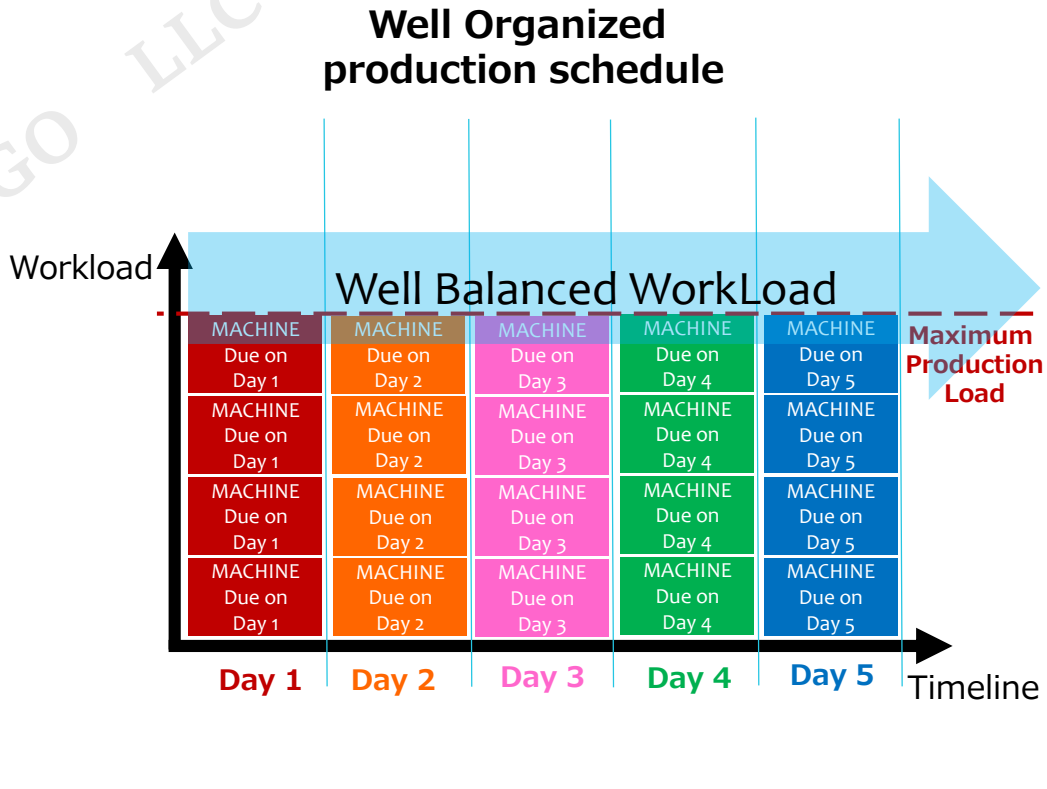
STEP of KAIZEN

Before *Kaizen*	After *Kaizen*
Cannot manage the stationary of the tools.	**Implementation of the management board.**
	

5S & 3M Application on production line

5S is an idea that is aimed at reducing waste of time & resource and being more efficient in how works are done. It is an approach to organizing and to controlling process of work in order to enhance its productivity while reducing its cost.





Production load is beyond maximum production load, so it needs overtime and extra staff

Machine are built too early (Day 3, Day 4, Day5) consequently it needs extra space inside warehouse

Late delivery will cause complain from customer

Workload is below maximum production load therefore production cost is not efficient. Too many staff working on small load of works