Continuous Improvement Toolkit

Visual Management
Visual Management

A business management approach that communicates important information in a visual and real-time manner.
Visual Management

A system of labels, signs, markings, information displays, and visual guides **instead of written instructions**
Visual Management

Lean organizations rely heavily on visual management to detect abnormalities, reinforce standards, and ensure stability and safety are maintained in the workplace.

A Lean leader should ensure that these visuals are useful and are being used constantly.
A good illustration of visual management are road signs, traffic lights and lane markers on the road. The messages they convey are so clear that when you see a traffic light for example, you know exactly what you should be doing.
Research shows that people tend to learn and process information more **visually**.

Our brains simply **respond better** and faster to colors, shapes, patterns, graphics and pictures.
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Just as road signs are easier to understand than written signs, **workplace visuals** are easier to understand than written instructions.

Therefore, effective workplace visuals can have a **positive impact** on safety, productivity, quality, and on-time delivery.
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The aim is to enable anyone working in the workplace to be able to assess the current situation at a glance.

This should bring the workplace to the point where all problems, abnormalities and waste to be immediately recognized.
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When problems and deviations are visible and apparent to all, **immediate corrective action** can be taken.

This will increase the efficiency and effectiveness of the processes.
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Workplace visuals can also play an important role in job training by **eliminating the need for constant supervision**

Employees would need less supervision because they understand the standards, see the results, and know exactly what to do.
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Employees need visuals that show what is expected from them and to keep them informed about production status and customer needs.
Visual management can also be used to share goals and ideas, indicate safety risks, promote safe behavior at work, and to report team and Kaizen progress.
# Visual Management

**BENEFITS**

<table>
<thead>
<tr>
<th>01</th>
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<th>08</th>
<th>09</th>
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</thead>
<tbody>
<tr>
<td>Eliminates confusion and creates stability to the environment, equipment and work performed</td>
<td>Increases the awareness of error conditions and waste</td>
<td>Replaces difficult to understand paperwork</td>
<td>Improves employees’ involvement and morale</td>
<td>Improves compliance to health, safety and environmental regulatory requirements</td>
<td>Reduces the opportunity for miscommunication</td>
<td>Improves the communication and handover between different shifts</td>
<td>Eliminates the need for time consuming meetings</td>
<td>Reinforces continuous improvement</td>
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Visual Management

Serves as the **key sustaining force** for many lean techniques

- 5S
- Standard work
- Pull production
- Quick changeover
- Total productive maintenance (TPM)
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Especially important during the **early phase** of Lean implementation
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Types of Visual Controls

INFORMATION
Visuals to show identity, directions, strategy, customer expectations and compliance requirements

INSTRUCTION
Visuals to communicate SOPs, work-related information, and workplace organization and maintenance activities

STATUS
Visuals to display the status of processes, projects, production, productivity and performance

Visual management includes a wide range of **visual controls** that help making all workplace elements and processes more visually apparent
Visual Management

Types of Visual Controls – Useful Questions

INFORMATION
- Where am I now?
- Where am I going to?
- Who works here?
- What is this machine?
- What are customers & regulatory needs?
- Is the area, behavior, or condition safe?

INSTRUCTION
- What should I do?
- When should I do it?
- How to do it correctly?
- How to do it safely?
- How to organize this area?
- How to store this item?
- When shall I reorder?

STATUS
- What is the status now?
- What is happening against what should be happening?
- Is there any waste in the process?
- Are there any problems or issues?

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Many techniques and principles rely on visual management.
Safety visuals are important to keep the facility safe and environmentally friendly.

Play an important role in reducing injuries, incidents, near-misses and occupational diseases by reducing unsafe behaviors and conditions.
Think of the manual of an airplane . . .
Safety signs and markings often use bright coloring to attract attention.
Safety signage, hazard warnings and safety instructions should be provided at the point of need.
It’s important to properly **identify** the locations of fire protection equipment, safety showers, eye wash stations, personal protective equipment, and first aid stations.

And to identify when and where to use personal protective equipment.
All **disconnect switches** for every electrically powered equipment should be clearly marked.
Wayfinding and directional signage help people find the way around.

They direct people from point to point and confirm the progress along a route.
Warning signs such as do not enter and no-smoking signs
Proper **marking** of the different elements in the workplace is important to avoid mistakes and increase efficiency and safety.

- Marking of machines, equipment & production lines
- Marking of materials and finished goods
- Marking floors and aisles
- Marking of offices, rooms, work cells and storage areas
- Marking of pipelines and valves
- Marking of emergency lanes and exit routes
Marking of machines, equipment and production lines by coloring and labeling each
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Marking of offices, rooms, work cells and storage areas
Floor marking is used to improve the layout of the workplace and mark critical safety and security areas.
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Floor Color Coding Standards

- **Aisle ways and traffic lanes**
- **Material or product held for inspection**
- **Scrap, rework, and red tag areas**
- **Raw materials**
- **Finished goods**
- **Work in progress**
- **Areas to be kept clear for safety reasons**
- **Areas to be kept clear for operational reasons**
- **Physical and health risk areas**

These colors are widely accepted and comply with international standards.

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Pipe marking communicates all the necessary information about the pipelines in the workplace.

Arrows are used to indicate the flow direction while colors often indicate the nature of the content.

You may also post the labels on the pipelines.
Pipeline Color Coding Standards

- **Fire quenching water or other fluids used in the fire fighting system**
  - e.g., hydrofluoric acid

- **Toxic and corrosive fluids**
  - e.g., hydrofluoric acid

- **Flammable liquids and gases**
  - e.g., hydrogen

- **Combustible fluids**
  - e.g., acetic acid

- **Water**
  - e.g., cooling and boiling water

- **Air**
  - e.g., compressed air

These colors are widely accepted and **comply** with international standards.
Using of **posters** and **banners** can reinforce business goals and values and promotes awareness of safety and wellbeing among employees.
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It is recommended to post **visual work-related instructions** and trouble logs at every machine.
A strong visual management system seeks to promote **consistency** and create process stability.

Standard work visuals help minimize production errors & ensure activities are always performed by all in the most efficient and effective way.
These visuals **includes** procedures, work instructions, check sheets, checklists, flowcharts, schedules, photos and one-point-lessons.
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Process specifications and standard operating procedures need to be posted at each machine or workstation.
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Visual controls are often used in conjunction with color standards to enhance clarity and workplace communication.

Example - A map for the areas which have the most safety incidents that resulted in lost time.
The best visuals are those that include **photos and drawings**, and those that are placed at the point of need.

![Images of a good can, a can with a pin hole, a can with a body dent, and a can with a neck scratch.](image)

**Visuals of good and bad parts are used to improve defect detection.**
The 5S methodology involves many visual management practices that can help creating a more organized workplace.
The second step of the 5S methodology ‘set-in-order’ promotes the use of **colors and labels** to clearly mark storage locations.

5S also promotes the use of many **inventory management techniques** to define inventory levels and reorder triggers.
The **min-max system** is one of the simplest visual methods to control inventory mainly for low-volume items.

It suggests setting upper and lower inventory limits for each item.

An order should be placed when the minimum level is reached.
In the **two-bin system**, the items are stored at two different bins. The first is intended for supplying the current demand and the second for supplying the demand during the replenishment period.
Post photos about how an area should be organized to remind people of the standard
TPM visuals can be effective in identifying and preventing abnormalities from turning into failures.

If something is not normal, we want to make that as apparent as possible.
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Marking gauges, oil levels and lube points are examples of visual controls that enable employees to easily **detect abnormalities** and out-of-specification conditions.
Color coding can be applied to gauges and other measuring devices to visually monitor whether process parameters remain within acceptable or safe ranges.
Colored sleeves can be used to identify all the tools within a particular kit, team or area.

This will help reducing the time spent looking for lost tools.
Transparent machine guards and covers will enable to see the running process of the machine, and as a result, the machine will be stopped less frequently.
An **area information board** is used to post visual information regarding the status of an operation for a specific area.
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It is useful to communicate status updates to ensure all employees are on the same page.

It is not a kind of wallpaper but a real team collaboration tool, and should be part of the daily management process.
Daily meetings can be conducted in front of the board to discuss the previous day’s issues and plan for the work ahead.
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Reviewing the board regularly is very important for the meetings to be productive.

Data should be collected on a daily basis to update the board.
Information on boards should be fresh and up-to-date including schedules and customer requirements.

A good visual board is an ALIVE board!
These stand-up meetings can also be useful to facilitate handovers in **multi-shift** operations.
All **aspects** of an operation can be discussed during the meetings

- **Safety**
- **Cost**
- **CI Projects**
- **Production & Productivity**
- **Quality**
- **Innovation**
- **Customer**
- **Teamwork**
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What to post . . .

Quality

- Problems
- Corrective actions
- Metrics
- Projects
- Notes

What else?

News, notifications, announcements, policy changes, events, accomplishments, records, ideas, best practices, etc.
Remember that **status visuals** are used to display the status of projects, processes, production, productivity & performance.
Area information boards can be used to display . . .

- Benchmark information
- Best practices and lessons learned
- The status of improvement projects
- Kaizen progress
- Operational records
- Other teamwork activities
A workplace without a display of **performance metrics** is like a car without a speedometer.

You may know where you are going but you have no idea when you will reach your destination.
Performance metrics should be displayed in a visually appealing way to allow people to get insight into how the operation is performing.
**BENEFITS of Visual Performance Boards**

<table>
<thead>
<tr>
<th>Gear</th>
<th>Presents the performance of a team, department, process &amp; business</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clock</td>
<td>Creates a sense of purpose and drives motivation</td>
</tr>
<tr>
<td>Magnifying Glass</td>
<td>Directs the team discussions around priority areas</td>
</tr>
<tr>
<td>Megaphone</td>
<td>Serves as a communication tool for others outside of the team</td>
</tr>
</tbody>
</table>
Customized performance charts allow to compare actual performance against target. This can be shown on daily, weekly, monthly or quarterly basis.
Monthly performance charts that show *averages* across time make it hard to understand and analyze the problems, and therefore, hard to improve.
Performance information should be **meaningful**, easy to understand, free of technical terms, accurate & up-to-date.

Everyone must be able to understand the message.
Real-time visual dashboards are used to **improve production control**

They make it easy to identify error conditions and allow to quickly respond to issues that would influence productivity.

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Production Summary Boards are used to monitor the output of an operation and see if it meets customer demand. They may also display other information such as efficiency, Takt time, etc.
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Production summary boards should be **visible** in the workplace, and everyone should be able to see where production stands.

This allows production and maintenance teams to quickly resolve process issues that may occur during production.

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Process-related metrics need to be displayed near the machine or work cell

While general plant metrics need to be posted in a central location where everyone can see it easily
Andon lights are powerful visual tools which are installed on production machines to indicate their current status. Since they are visible from a distance, they are very useful in bringing immediate attention to problems as soon as they arise.
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For example, a light may turn on to indicate a shortage of raw materials, awaiting parts, or the need for maintenance.

The system can include means to stop the process, so the issue get resolved.
Each color represents a particular state of the machine or production line

- Operation is down for unknown reasons and needs further investigation
- Operation is down (no order, maintenance, cleaning, quality checks, etc.)
- Operation is normal
### Visual Management

<table>
<thead>
<tr>
<th>Remember that your goal is to make the area more informative</th>
<th>Decide where you need to implement visual management</th>
<th>Decide who are your target audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decide who are going to be involved in the implementation effort</td>
<td>Use the colors and standards that are being used consistently</td>
<td>Determine the type of information that needs to be conveyed</td>
</tr>
<tr>
<td>Let the teams help creating the visual controls and boards</td>
<td>Create a guide that describes the key elements associated with the visual management system</td>
<td>Design and use a checklist to evaluate your visual controls</td>
</tr>
<tr>
<td>TIPS to create an effective visual management system</td>
<td>Mark floors, add signs, label storage areas, post standard work, create visual boards, etc.</td>
<td>Include reviewing the visual controls in your Gemba walks</td>
</tr>
</tbody>
</table>

**TIPS**

- Mark floors, add signs, label storage areas, post standard work, create visual boards, etc.
- Include reviewing the visual controls in your Gemba walks.
An **effective** visual management system . . .

<table>
<thead>
<tr>
<th>Relates to the strategy of the company</th>
<th>Displays customer needs &amp; expectations</th>
<th>Shows identity and directions</th>
<th>Makes abnormalities apparent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communicates standards and instructions</td>
<td>Displays performance targets and results</td>
<td>Easy to use and understand</td>
<td>Links to action</td>
</tr>
</tbody>
</table>
Visual management is not just making charts and metrics visible on a wall!

It is a **real-time system of marking and visuals** that allows teams to respond promptly to signals to solve issues and support the production process.
Further Information

It is very common to conduct **Kaizen events** where the focus is to enhance the visuality of a specific process or work area.
Further Information

Visual management is a **collaborative process**, and people engagement is key to the contribution they will provide later.

*See, know, and act collaboratively*

Listen to them, involve them, and let them own the visuals.
If people from outside the area are **updating** the boards, then it will be seen that management are owning them.

In this case, don’t expect anyone to read the boards or even care what’s in them.
Can also be useful for support functions in the production environment (such as accounting, sales, engineering and R&D) and in the service sector.
Visual Management

Further Information - Examples in the Service Sector

The queue counter display in a bank.

A sign indicating the different types of waste disposal bins in a hotel lobby.

A sign indicating cleaning in progress or wet floor in a washroom in a shopping mall.

The signs in an airport that direct passengers to the luggage claim area.
A **Kanban** provides a visual method of inventory control and uses color coded cards to support a pull system.
## Visual Management

### Further Information

### Examples of how to eliminate waste using VM

<table>
<thead>
<tr>
<th>Reduce <strong>waiting</strong> by visually defining work sequence.</th>
<th>Prevent excess <strong>transportation</strong> by labeling and marking locations and paths.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce <strong>motion</strong> by ensuring all parts and tools are accessible and recognizable.</td>
<td>Eliminate excess <strong>inventory</strong> by improving visibility of storage.</td>
</tr>
<tr>
<td>Prevent <strong>overproduction</strong> by visually displaying production actuals and targets.</td>
<td>Eliminate excess <strong>inventory</strong> by improving visibility of storage.</td>
</tr>
<tr>
<td>Reduce <strong>defects</strong> by quickly responding to Andon signals.</td>
<td>Minimize the non-use of <strong>skills</strong> by visually sharing problems and working together to solve them.</td>
</tr>
</tbody>
</table>
A Kamishibai board is a visual management method that is used to **manage routine activities** in a workplace. It can be used to audit safety and security measures as well as to confirm that standard work is being undertaken by all employees.

In its simplest form, it consists of a board and multiple cards that display selected activities to be performed.
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Further Information – Kamishibai Board

Typically, each card is red on one side and green on the other to indicate whether the activity has been completed or not.

<table>
<thead>
<tr>
<th></th>
<th>DAILY</th>
<th></th>
<th>WEEKLY</th>
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<tbody>
<tr>
<td></td>
<td>![Green Card]</td>
<td>![Red Card]</td>
<td>![Green Card]</td>
</tr>
<tr>
<td></td>
<td>![Green Card]</td>
<td>![Red Card]</td>
<td>![Green Card]</td>
</tr>
<tr>
<td></td>
<td>![Green Card]</td>
<td>![Red Card]</td>
<td>![Green Card]</td>
</tr>
</tbody>
</table>

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Example from a Production Environment

1. Safety sign
2. Andon lights
3. Floor marking
4. Machine identity
5. Visual instructions
6. Gauge marking