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Shop Floor - Visual Management

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“From chaos to clarity, visual management on the shop floor is the guiding map to excellence and the pulse of operational excellence”

– Amarpreet Singh

Agenda

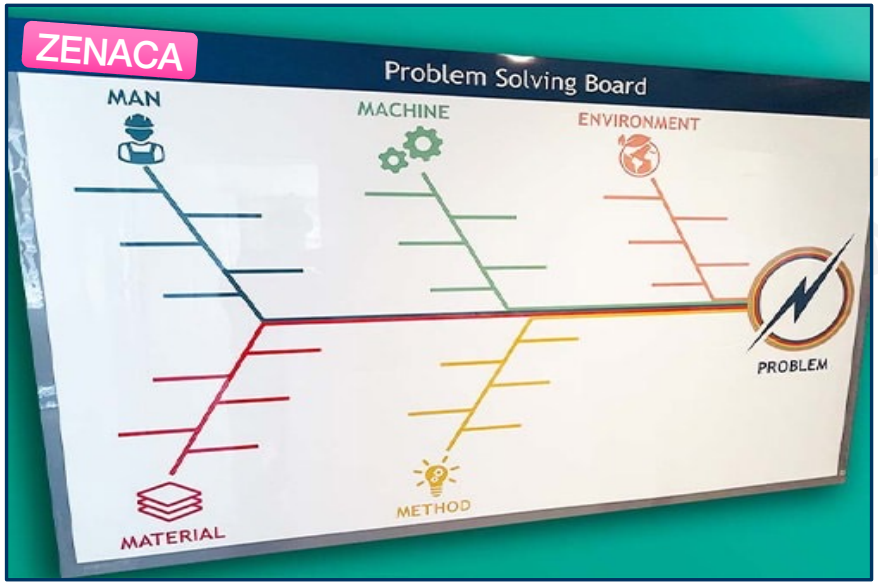
- Definition
- Functions of Visual Management
- Benefits
- Lean Tools for Visual Management
- Design Guidelines
- Implementation Guidelines
- Q & A

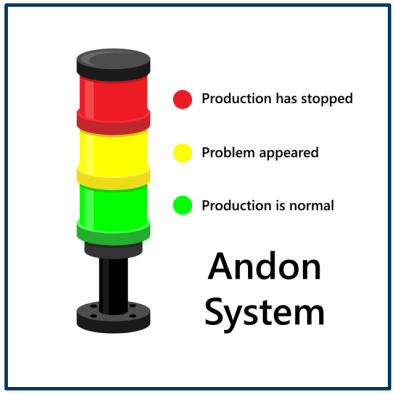
Definition – Visual Management

Visual management is the display of information in the workplace to inform teams, enforce work standards, and highlight or prevent problems.

- Visual management serves as a means of communication, providing a quick overview of manufacturing operations.
- Visual management is a critical component of lean manufacturing and is used to improve productivity, safety, and efficiency on the shop floor.
- The most obvious function of visual management is to share information. This is done through dashboards, markings in the work environment, lights etc…

Visual Management - Examples



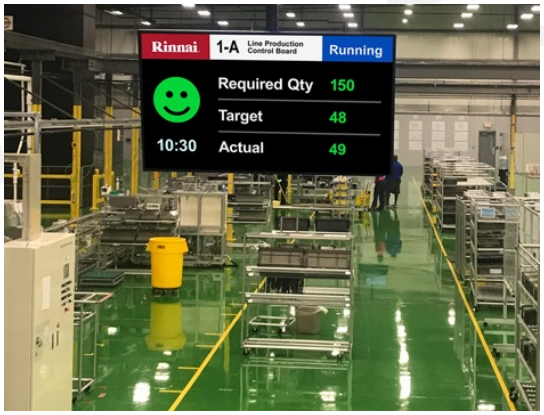


Function of Visual Management

1. Information Sharing

- The primary purpose of visual management is to communicate information effectively. This is achieved using dashboards, markings on the shop floor, lights, and similar visual elements.

Production Board – Manual



Production Board – Digital

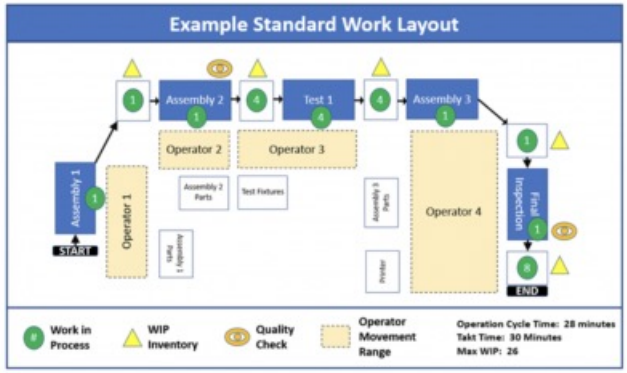
Floor Markings

Function of Visual Management

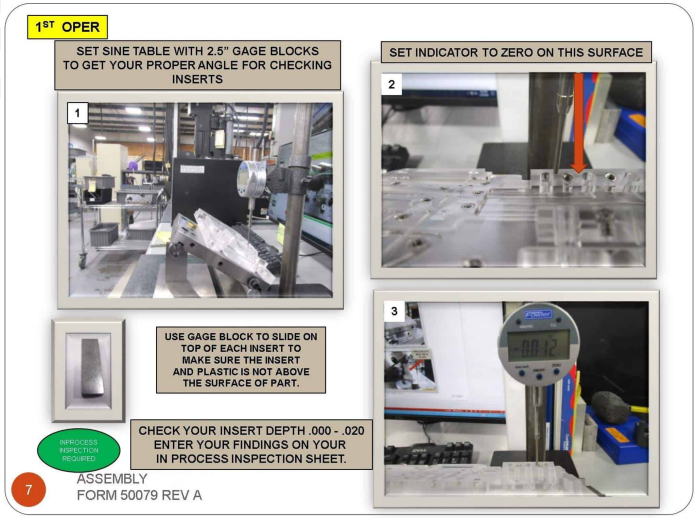
2. Standard Work

✓ Once work standards have been established, visual management comes into play to present these standards in a relevant context, eliminating any ambiguity about what the standards entail.

✓ By documenting the steps of a process and incorporating visual cues in the physical environment to direct the work, the work standards become readily apparent to anyone approaching the workstation.



Standard Work



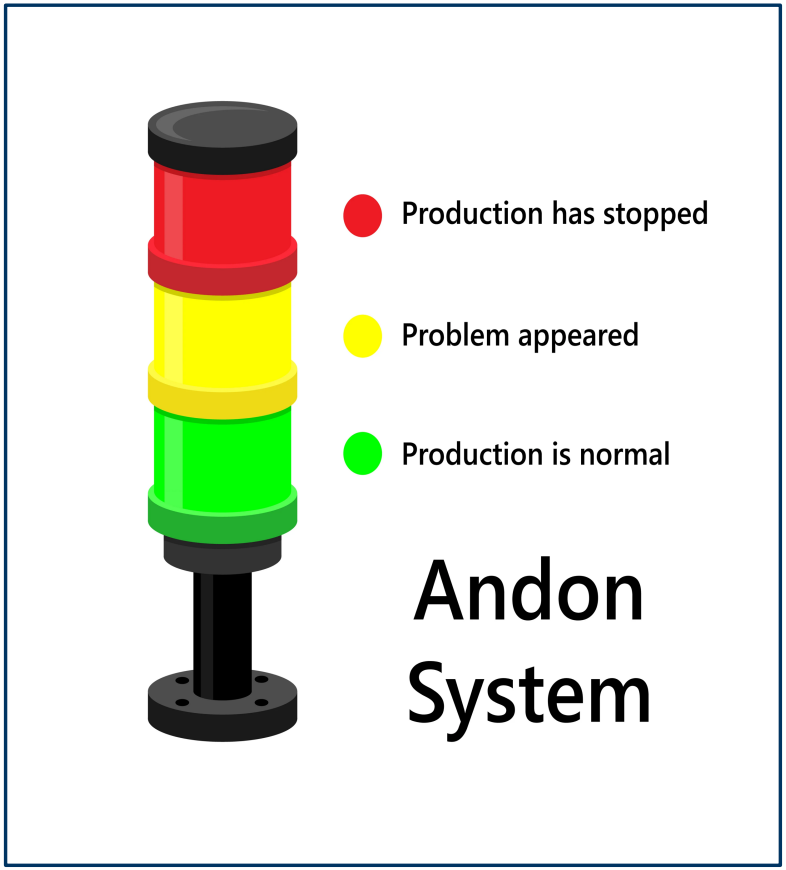
Visual Work Instructions

Function of Visual Management

3. Highlight Abnormalities

- Utilizing visual management enables swift indication of issues when they arise. Automated systems prove beneficial for both supervisors and workers, allowing them to concentrate on other responsibilities until a problem is flagged.

Once an issue is identified, a prompt signal is triggered, enabling a rapid resolution before returning to their initial tasks.



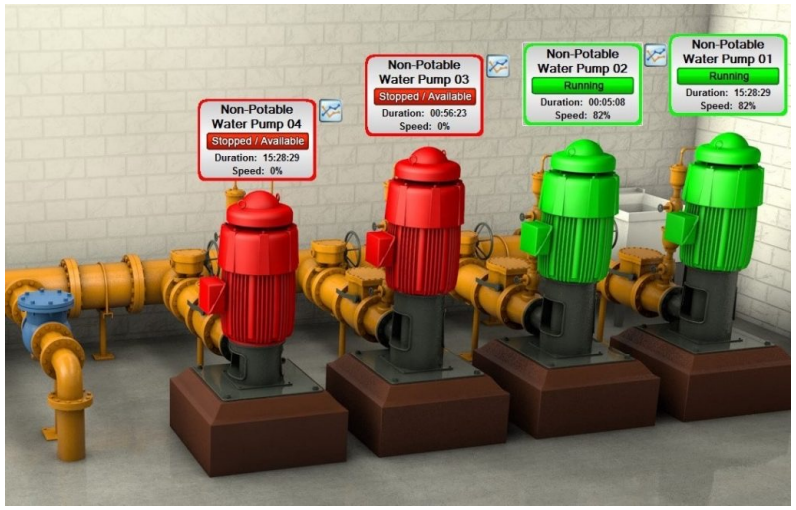
Andon Lights

Function of Visual Management

4. Solve Problems

- Visual management is an effective tool for problem-solving in various scenarios. For instance, when there is recurrent confusion in a facility regarding a specific location or process, implementing appropriate visual management can address and resolve this issue.

In cases where operators frequently misuse a machine, visual management can serve as a preventive measure by clearly illustrating the proper usage of the machine, thus averting potential problems.



Visual Management on Machine

Visual Management - Benefits

Transparent processes

Implementing visual management facilitates a clear understanding of process dynamics for all stakeholders. A well-crafted process design enhances the operator and supervisor experience by making the workflow easily understandable and manageable.

Accountability and consistency

Visual management enhances accountability among workers by providing transparent processes. When the details of a process are readily visible, subpar work has fewer opportunities to go unnoticed. This fosters clear expectations and promotes improved consistency in performance.

Visual Management - Benefits

Work Simplification

Visual management streamlines work processes by eliminating ambiguity, enabling operators and supervisors to concentrate on their assigned value-added tasks. It also reduce obstacles by preventing interference between operators engaged in distinct tasks. In essence, it assists workers and supervisors in maintaining their focus, ensuring a smooth flow of work.

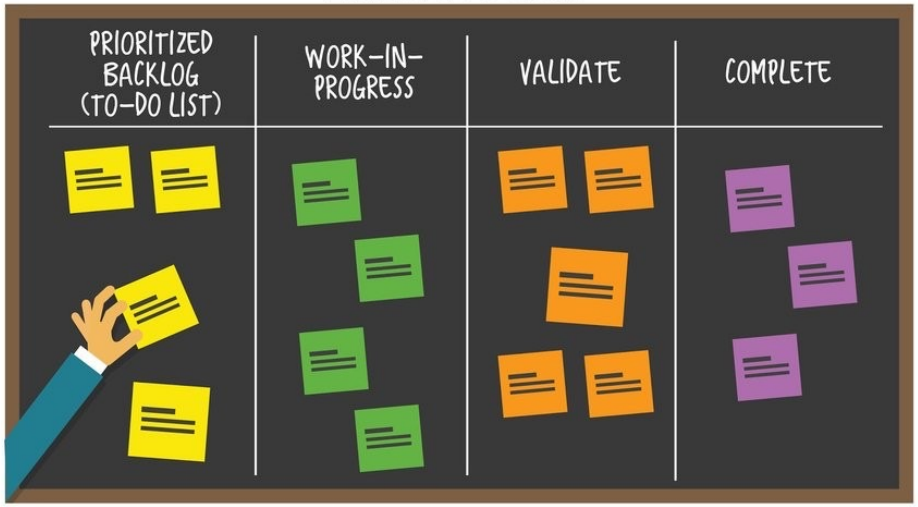
Real Time Training

Visual management facilitates real-time training by making the work intuitive. With clear visual cues and guidance, most tasks become straightforward enough for an operator with minimal experience to learn within short time.

Visual Management – Lean Tools

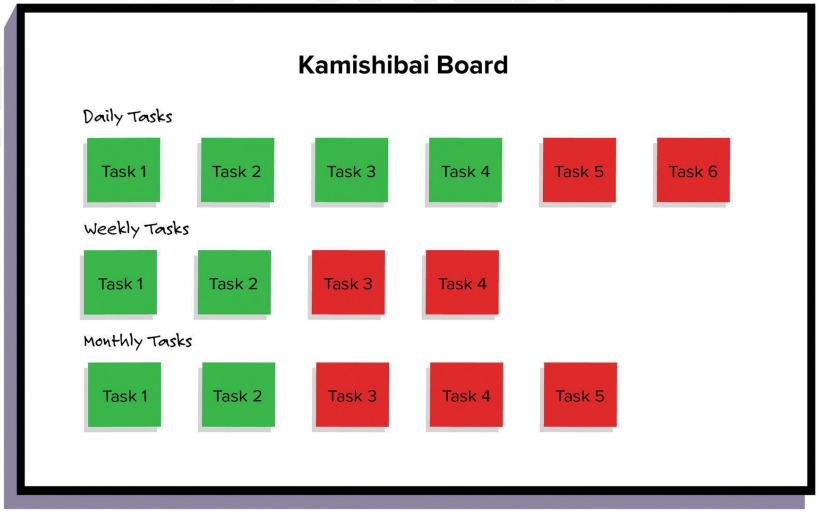
- *Kanban Boards*: Utilizing columns and visual cues, Kanban boards visually depict work processes, tasks, and their status.

They facilitate the monitoring and management of workflow, enabling teams to visualize progress, pinpoint bottlenecks, and maintain a consistent workflow.



- *Kamishibai Boards*: Employing cards to signify scheduled tasks or audits, Kamishibai boards are visual management tools that ensure regular checks, audits, and adherence to standard work procedures.

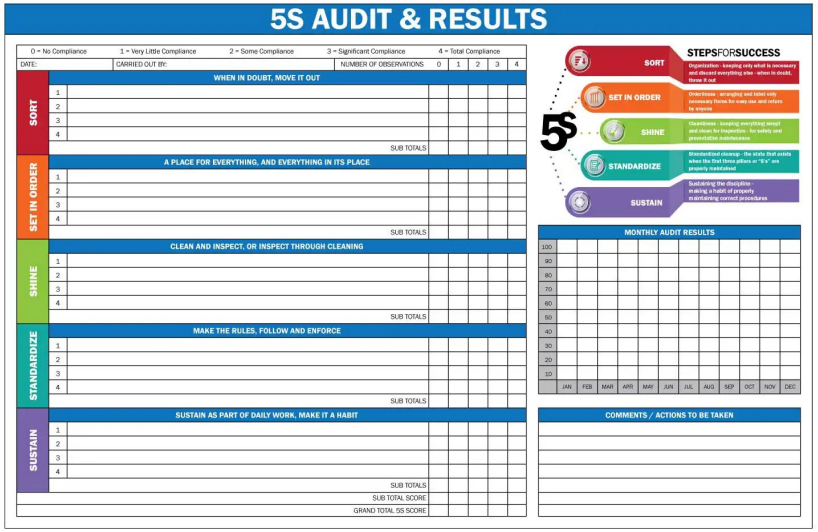
Tasks progress is indicated by moving cards from one column to another, ensuring timely completion



Visual Management – Lean Tools

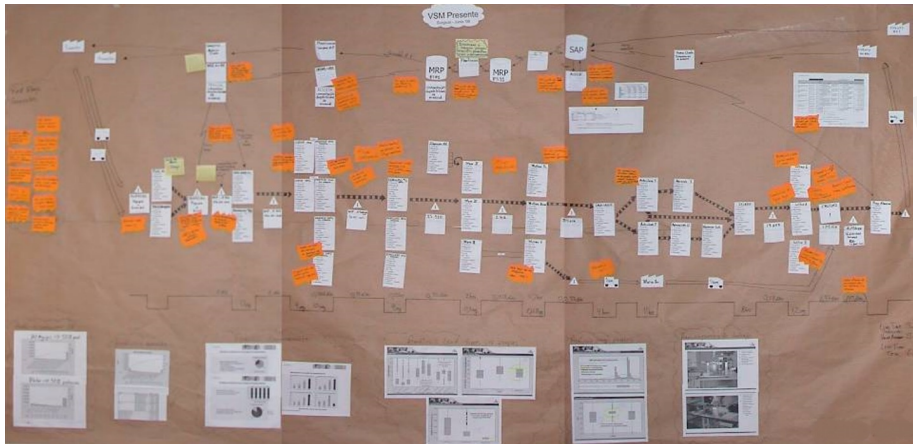
- *Huddle Boards*: Specifically designed for daily team huddles or stand-up meetings, huddle boards display pertinent information such as team goals, metrics, safety updates, and initiatives for problem-solving.

- *5 S Boards:* This board is designed to display the status of daily 5S audits on the shop floor. This helps in understanding the 5S status of the shop floor in real time.



Visual Management – Lean Tools

- *Value Stream Mapping* : Visually illustrating the flow of materials, information, and processes within a value stream, VSM helps identify waste, bottlenecks, and improvement opportunities.



- *Visual Performance Dashboards:* Performance dashboards, such as Balanced Scorecards (BSC), visually present key performance metrics, goals, and targets.

No.	Strategic Measurement	Weight	50	100	Actual	Score	Fullfillment	Weighted Score
1	**Transportation**	20%						
1.1	Damaged Goods Delivered(%)	25%	4%	2%	2%	100	25	15
1.2	On Time Delivery(%)	55%	94%	98%	95%	62	34	
1.3	Average Costs Per Order(USD)	20%	50	40	44	80	16	
2	**Warehousing**	25%						
2.1	Storage Utilization Rate(%)	80%	85%	90%	87%	70	56	17
2.2	Inbound Activities(%)	20%	92%	95%	93%	67	13	
3	**Inventory Management**	40%						
3.1	Average Duration of Storage(Days)	75%	12	18	16	83	63	35
3.2	Inventory Accuracy(%)	25%	92%	95%	95%	100	25	
4	**Order Processing**	15%						
4.1	Order Fullfillment Cycle Time(Days)	90%	7	5	5	100	90	15
4.2	Order Fill Rate(%)	10%	89%	92%	91%	83	8	
	Overall Performance	100%						

They offer real-time visibility into performance and encourage data-driven decision-making at various organizational levels.

Design Guidelines

- *Ensure Clarity and Conciseness*: Guarantee that the information presented on the visual management board is clear, concise, and easily comprehensible immediately. Employ visuals, symbols, and colours to swiftly and effectively convey messages.

- *Utilize Visual Hierarchy*: Organize the information on the board in a logical and visually appealing fashion. Use visual cues such as size, colour, and placement to signify the importance or priority of different elements.

- *Integrate Real-Time Data*: Elevate the board's effectiveness by showcasing up-to-date information, turning it into a potent tool for monitoring and decision-making. This may include live production metrics, performance indicators, or ongoing progress updates.

Design Guidelines

- *Create Interactivity and Engagement*: Foster a collaborative environment by encouraging team members to contribute ideas, suggestions, or feedback.
- *Consistency*: Maintain consistency when employing multiple instances of the same visual management tool.
- *Visibility*: Ensure key information is visible from 40 feet.
- *Right Location of the Display*: Present information in a location that is pertinent to the user, ensuring user-specific relevance.

Design Guidelines - Floor Markings

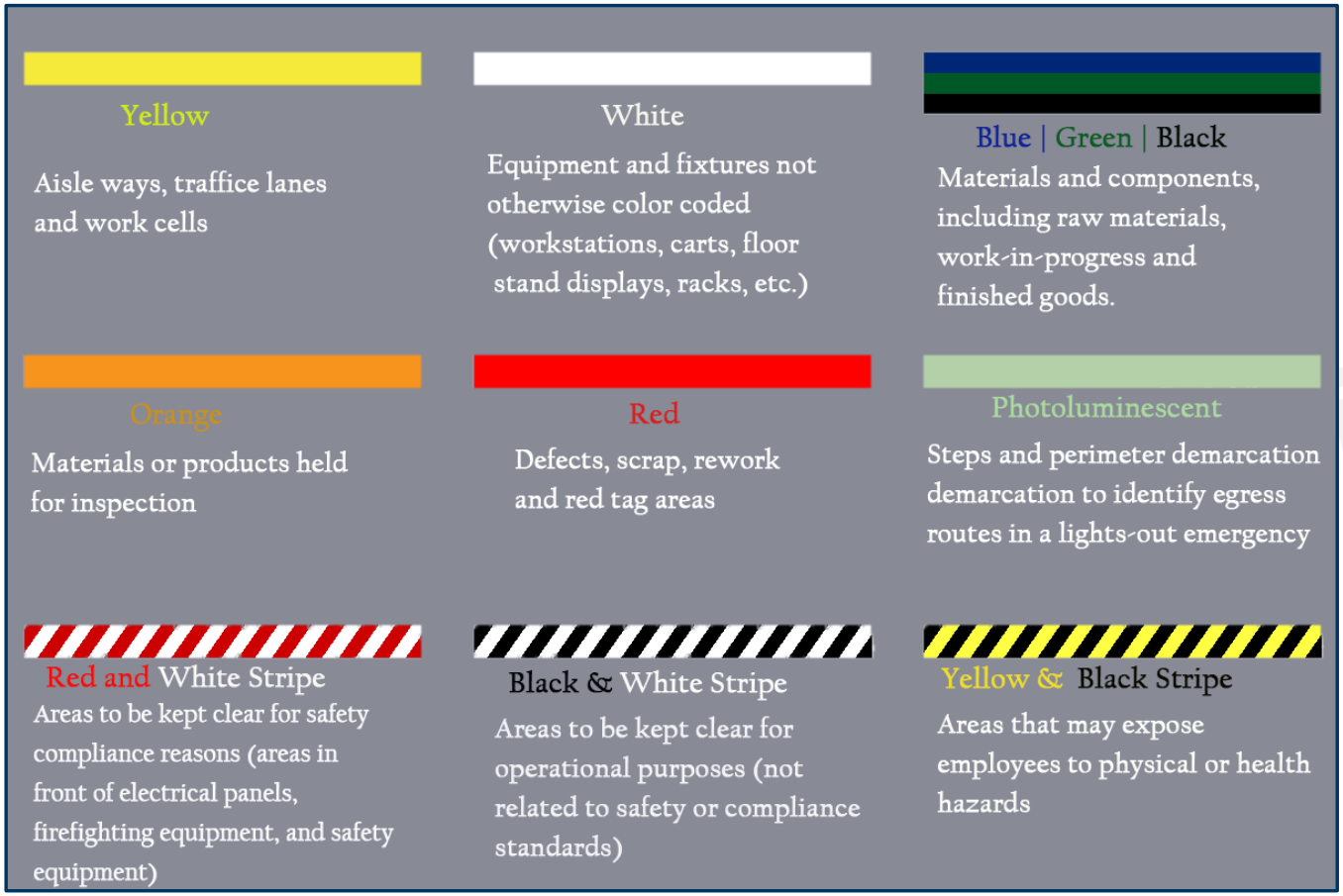


Image credit - https://engg.directory/know-the-meaning-of-various-colour-coding-used-in-floor-marking

- These guidelines are general in nature, and certain organizations establish their own definitions for floor markings.

Design Guidelines

- Like any other practice, visual management can be executed poorly. It's notably common to go overboard with excessive markings.
- This is excessive. There is no benefit to visual management for individual pens and scissors, especially on a personal desk.

Visual Management - Implementation

Step 1: Identify key areas for visual management

- *Production Floor*: Visual management has the potential to enhance production processes, reduce waste, and maintain seamless operations on the shop floor.
- *Office Area*: The implementation of visual management in office areas can streamline workflow, foster information sharing, and elevate overall productivity.
- *Project Management Boards*: Visual tools prove invaluable in monitoring project progress, pinpointing crucial milestones, and improving overall project coordination.
- *Inventory Control*: Utilizing visual management techniques can optimize inventory management, guaranteeing precise stock levels and promoting efficient material flow.

Visual Management - Implementation

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Step 2: Selection of Right Tools

- *Floor Markings and Colour Coding*: Employ floor markings and colour coding to direct movement, define work zones, and visually convey information or instructions.
- *Visual Charts and Graphs*: Utilize charts and graphs such as Pareto charts, Gantt charts, and process flow diagrams to illustrate data, performance metrics, and trends.
- *Task Boards and Kanban Cards:* Integrate task boards or Kanban systems to visualize workflows, monitor tasks, and manage Work In Progress (WIP). Kanban cards represent individual work items or tasks.
- *Andon Lights and Signals*: Implement Andon systems with lights or signals to offer real-time status updates, notify team members of issues, and facilitate a prompt response.

Visual Management - Implementation

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Step 3: Training and Team Involvement

- *Training Employees*: Conduct training sessions to familiarize employees with visual management concepts, tools, and techniques.
- *Encouraging Participation:* Cultivate a culture of engagement by motivating team members to share ideas, suggestions, and feedback related to visual management.
- *Conducting Regular Meetings*: Organize regular meetings to evaluate visual management practices, address challenges, and share success stories, fostering a culture of continuous improvement.

Visual Management - Implementation

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Step 4: Developing a Continuous Improvement Culture

- *Identifying Bottlenecks and Inefficiencies*: Consistently evaluate processes, pinpoint bottlenecks, and employ visual management tools to rectify inefficiencies and promote improvement.
- *Utilizing PDCA (Plan-Do-Check-Act) Cycles*: Integrate PDCA cycles to methodically plan, execute, evaluate, and adjust visual management practices, fostering continuous optimization.
- *Celebrating Success and Acknowledging Efforts*: Acknowledge and celebrate the accomplishments and dedication of individuals and teams who embrace visual management, contributing to positive outcomes.

Do you have more questions on topic ?

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Thank You