DAILY MANAGEMENT PROCESS FOR REDUCE COST OF QUALITY IN AUTOMOBILE INDUSTRY

S.N.Teli¹, Dr.V.S.Majali², Dr.U.M.Bhushi³, Sunil Gaikwaid⁴

¹Associate Professor & HOD -Mech. Engg. Dept., SCOE, Kharghar, Maharashtra, India
[Research Scholar GIT Belgaum -VTU, Belgaum, Karnataka]
²Professor & HOD – Mech. Engg.Dept. , GIT, Belgaum, Karnataka, India
³Principal - Sahyadri College of Mangalore Engineering & Management, Mangalore, Karnataka, India
⁴M.E. Student - SCOE, Kharghar, Maharashtra, India

ABSTRACT

The global automotive industry features intense competition, a sharp focus on cost, and a regulatory oversight. There is an ongoing trend towards global sourcing and distributed manufacturing/assembly operations. All of these factors are driving a need for an extensible and flexible quality management system that automates field-level quality management tasks and provides real-time visibility into all aspects of quality management across manufacturing facilities and supplier locations around the world. In pursuit of breakthrough improvement and innovation, organizations tend to give less importance to routine activities or Daily Management. In the absence of a proper Daily Management system, the benefits derived from breakthrough improvements & innovations slowly losses its effectiveness.

All the activities that must be carried out routinely in each area in order to attain the purpose of their job effectively and efficiently is termed as “Daily Management” Daily Management is also called as Daily Routine Management or Routine Management. In a nutshell Management of routine jobs at all levels is Daily Management. In process improvement efforts, the concept of quality costs or cost of quality is a means to quantify the total cost of quality-related efforts and deficiencies. COQ costs as the “price of conformance” – the prevention and appraisal costs and the “price of non-conformance” – the failure costs. In recent years, interest in cost of quality (COQ) system is increasing among Indian Automobile industries. Cost of Quality (COQ) is the sum of the costs incurred by a company in preventing poor quality, the costs incurred to ensure and evaluate that the quality requirements are being met, and any other costs incurred as a result of poor quality being produced. Poor quality is defined as non-value added activities, waste, errors or failure to meet customer needs and requirements. These COQ costs can be broken down into the three categories of prevention, appraisal and failure costs. The implementation of Daily Management System and other quality initiatives necessary to reduce the cost of quality.
The methods required for sustaining Daily Management are the following:

- **Standardization** – to provide consistency
- **Training** – to give the associate the needed skills
- **Standard Audits** – to assure the standards are followed
- **Failure Analysis** – to address deviations
- **Solicit and act on ideas for improvement**
- **Communications** – so everyone knows the business situation

### 1. DAILY MANAGEMENT ACTIVITIES AND SCOPE

This process is for all employees of all functions across the automotive sector. Applicability of this guideline is for all employees of all functions across the Automotive Sector.

<table>
<thead>
<tr>
<th>Daily Management includes management of:</th>
<th>Classification of Daily Management activities</th>
<th>Scope of Daily Management includes</th>
</tr>
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<tbody>
<tr>
<td>Hourly basis</td>
<td>Daily Management activities</td>
<td>Front Line operation</td>
</tr>
<tr>
<td>Daily Job</td>
<td></td>
<td>Supervisor Lab</td>
</tr>
<tr>
<td>Weekly Job</td>
<td>Maintain the current level</td>
<td>Section Manager Job</td>
</tr>
<tr>
<td>Monthly Job</td>
<td>Incremental improvement from current level</td>
<td>Department to Top Manager Job</td>
</tr>
<tr>
<td>seasonal Job</td>
<td></td>
<td>etc.</td>
</tr>
<tr>
<td>Yearly Job &amp; etc</td>
<td></td>
<td></td>
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</table>

### 2. PURPOSE OF DAILY MANAGEMENT PROCESS

Managing the routine jobs at all levels effectively and efficiently, with intent to sustain and improve the present level of performance (i.e. stability). The illustrations shown in fig 2 

**Fig 1:** Improvement by Breakthrough only

**Fig 2:** Improvement by Breakthrough & Daily Management
3. CONTROL POINTS

Control Points are indicators used to measure progress in achievement of our objectives decided by management. They are also called Measure of Performance (MOP). Control Points are further classified into:

- **3.1 Result Measurables (Managing Points)**: Result Measurables indicate whether customer expectations are met or not; it shows improvement only after the key processes are improved.

- **3.2 Process Measurables (Check Points)**: Process Measurables indicate the performance of the key processes; it predicts the performance of Result Measurables.

  - The relationship between Result and Process Measurables could be of type: Effect-Cause & Objectives-Means. Refer Fig.4 & Fig.5 for further clarity on Result and Process Measurable as applied in Manufacturing and Sales area respectively.

  - Criteria for selecting Measurable are that they should be important to manage our business, Vital few & be actionable, easily accessible, understandable, agreed upon and predictive in nature.

  - Process Measurable should be measured more frequently than Result Measurable to give an early indication of course correction.

Fig 3: Types of Control Points

Fig 4: Control Points in Manufacturing

Fig 5: Control Points in sales Control Levels
3.3 Control Levels
They represent a standard used to judge whether a characteristics value of the control point is in a controlled state or an uncontrolled state.

- This is the next step after Control Point is set, i.e to set the “Range” for the Measurement. These ranges are called “Control Limits” or “Control Levels”.
- For those indicators that follow “Normal Distribution” such as physical and chemical indicators, one can use Statistical Control Charts.
- For those indicators that do not always follow “Normal Distribution” such as production amount, sales amount, etc one can identify the control limits based on common sense. Past trend /Industrial benchmarks could be used to decide the Control Levels. Control Levels can be unilateral / bilateral type.
- Criteria for selecting Control Levels are that they should be aggressive, yet attainable, agreed upon, clearly benefiting our business, and flexible.
- Shown below are examples of Control Levels used for Result Measurables and Process Measurables in a Manufacturing Plant.

![Fig 6: Monitoring of Result Measurable](image1)
![Fig 7: Monitoring of Process Measurable](image2)

4. POLICY MANAGEMENT & DAILY MANAGEMENT

- Activities performed on the basis of cooperation of the whole business organization in order to realize long term, middle term or short-term management plans and policies effectively and efficiently comes under Policy Management.
- Breakthrough improvements are achieved by Policy Management, while continuous improvements are achieved by Daily Management.
- In former, objectives are achieved through planned activities which are normally done beyond the existing framework. While in latter, objectives are achieved through standardization of activities and pursuing continuous improvement by identifying abnormalities and taking appropriate measures to prevent its recurrence.
- Policy Management activities involves rotating Plan-Do-Check-Act (PDCA) till performance is improved to a desired level. These activities then become part of Daily Management so that they are standardized to sustain the performance in future by rotating Standardize-Do-Check-Act (SDCA).
• If some chronic problems are identified in Daily Management that needs to be addressed on priority, then they are solved using structured problem solving tools such as QC Story. Refer Fig: 8 which depict the linkage between Policy Management and Daily Management. Policy Deployment in Manufacturing is shown in Fig: 9 Objectives / Deliverables are set at Sector level (i.e President Policy–CE Policy– Manufacturing Head Policy), which gets cascaded to Plant Level and further to P.U Level.

5. DAILY MANAGEMENT & POLICY MANAGEMENT WEIGHTAGE: AT SENIOR MANAGEMENT LEVEL:

Both Daily Management and Policy Management are present. Weightage of Policy Management is more, i.e they should standardize the activities and empower the people to perform the “Daily Management” and should work much more on strategic issues. Apart from that, they should also promote Daily Management amongst all levels of employees.
6. Abnormality Handling System: While monitoring the Control Point, any unusual behavior other than which is normal must be captured. It covers both occurrence of non-conformity and abnormal behavior of the process. Corrective actions to be taken once abnormality occurs, irrespective whether it generates non-conformity or not. If any abnormalities are found, they are dealt as per the Abnormality Handling System shown in Fig 11.

Fig 11: Abnormality Handling System

7. Elements of Daily Management: Steps involved in Daily Management are:

Fig 12: Daily Management Steps

8. Daily Management in Manufacturing: Daily Management in Manufacturing is as shown below.

Fig 13: Daily Management in Manufacturing
9. POLICY DEPLOYMENT AND DAILY MANAGEMENT LINKAGE

Linkage between Policy Deployment and Daily Management is shown & how new initiatives & improvement projects are identified is described below.

![Diagram showing linkage between Policy Deployment and Daily Management]

**Fig 14:** Linkage of Policy Management and Daily Management

10. Various indicators are illustrated below:

<table>
<thead>
<tr>
<th>Types</th>
<th>Indicators</th>
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<tbody>
<tr>
<td>Quality</td>
<td>Warranty , User Plant PPM ,A-NOVA C , Global Demerit ,FRC,FBO, Rejection PPM , Rework PPM</td>
</tr>
<tr>
<td>Productivity</td>
<td>Equivalent Veh./man/year, effective working Time , Work content Reduction , Manpower Reduction</td>
</tr>
<tr>
<td>Cost</td>
<td>Variable cost(power, tools, etc)/eq. vehicle , fixed cost w.r.t. Budget , Cost saving due to improvements</td>
</tr>
<tr>
<td>Safety</td>
<td>Reporable, Non-reportable accidents, Accident free days, Near miss cases, organ wise cases, safety Patrol rounds</td>
</tr>
<tr>
<td>Morale</td>
<td>Training, Conflict resolution &amp; meeting with top Management, Man of the month, absenteeism, i4 Team status, saving through suggestions, kaizens, dormant &amp; best team for i4 teams</td>
</tr>
</tbody>
</table>
11. Typical Display Chart for Key Indicators Monitoring (Daily Management):
The monitoring and display of the key Quality indicators shall indicate Yearly, Monthly and Daily trends.

Typical indicators monitored on a defined frequency to assess/measure the effectiveness of Daily Management activities are:

- Percentage of Control Points which are within Control Levels.
- Number of abnormalities identified.
- Number of abnormalities for which corrective actions (PDCA rotations) were undertaken.
- Percentage of Processes for which Daily Management practices are implemented.
12. CONCLUSION & RESULT:

- Innovations/breakthroughs are brought about in any organization occasionally or intermittently. There is a high jump in improvements. These high jump improvements are incorporated in the new practices/systems/processes. Then, after one innovation/breakthrough, there may be a lull. During this lull period and in absence of daily management or continuous improvements, these dramatically improved processes start degrading or deteriorating. And the processes become inefficient /ineffective. Lots of advantages of innovation disappear or are lost.

- This is where daily management comes in. It insists on daily performance and also, daily improvements. It keeps on maintaining and further improving the processes. The fall or degradation of processes is now just not possible. Therefore, daily management is in fact a management imperative. You cannot do without it (you may occasionally do without an innovation/breakthrough).

- It may not be as stunning or exciting as an innovation, effective daily management is the foundation on which maximization of advantages due to innovation and company viability firmly stay.

- Total COQ decreases over time for companies with Daily Management Process.

To successfully sustain any improvement or revitalization program, you need to “stay the course” and the Daily Management system helps to make that happen. There are few naturally born and dynamic leaders who can drive the transformation. The Daily Management system provides guidance so that the average manager can perform well in engaging the hearts and minds of all of the front-line workers.

REFERENCES


