World is under lockdown and majority of manufacturers related to non-essential commodities have stopped their production. To make any production facility operational after a long outage, plant managers have to conduct inspection & maintenance activities to avoid any catastrophic failures. This process is similar to turnaround / shutdown/outage management process in which operators take plant outage to carry out major repair & overhaul activities to upkeep the equipment condition.

Any delay in turnaround have huge impact on production plan thereby, delay in fulfilling the customer orders or even losing the orders. For example- One day loss of production in 4000 tpd cement plant amounts approx. 350 K USD. In case of automobile plant having capacity of 480 vehicles/day, the estimated losses are upto 410K USD.

Issues faced by manufacturers during Turnaround:

- Turnaround projects run the risk of time over-runs, thus increasing zero-production days beyond those budgeted days. This typically leads to requirement of workforce double or more in numbers in comparison to normal operation.
- Ensuring the safety of workers in the plant. Workers handle complex machinery exposed to workplace hazards like heat exposure, confined space, gas emissions etc.
- Ensuring the employee productivity.
How Tech Mahindra can help:
- Proven expertise on Critical Chain Project Management (CCPM) / Theory of Constraints (TOC) consulting
- Connected worker solution for tracking workers for their safety & productivity
- Based on our experience with multiple asset intensive industries, anticipated savings will be in range of 10-20%

Pictorial representation of the solution:

Benefits

<table>
<thead>
<tr>
<th>Shorter outage cycle</th>
<th>Enhanced Worker</th>
<th>Effective Contractor Management</th>
<th>Productivity improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage non-critical path activities better</td>
<td>SOS, Fall detection &amp; proximity detection</td>
<td>Validation of billings with time data / location data</td>
<td>Locate people / ensure in proper place</td>
</tr>
<tr>
<td>Near real-time execution status and drill down analysis</td>
<td>Geofence, lockout violation alarm</td>
<td>Ensure consistent contract usage</td>
<td>Locate Equip/Vehicles / Tools</td>
</tr>
<tr>
<td></td>
<td>Fatigue Management – Temperature &amp; Heart rate</td>
<td>Evaluate vendor productivity / quality impacts</td>
<td>Evaluate / compare jobs / vendors / etc.</td>
</tr>
<tr>
<td></td>
<td>Knowing the no. of people at site</td>
<td></td>
<td>Evaluate resources usage / needs (Equipment, tools, vehicles)</td>
</tr>
<tr>
<td></td>
<td>Tracking/alarming the unauthorized entry into restricted zones</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Case study

- **Mexican multinational building materials company:**
  Reduced the customer’s plant shutdown time by 28% with additional cement production of 8000 mt

- **French Industrial Company:**
  Shutdown schedule optimization was done for multiple plants of the customer on an average of 20% leveraging CCPM principles.

Contact Us: www.techmahindra.com