Power of any solution comes from decisions made by utilizing captured and analyzed data.
The Session will Cover:

1. How Analytics Tied Directly to Your CMMS can Drive Performance for Maintenance and Reliability Manager

2. Will Discuss the Necessary Tools and Data Needed to Assist with Sound Business Decisions

3. Review How Data is Collected and Analyzed to Identify Labor Problems and Opportunities to Improve Labor Utilization and Wrench Time
“You cannot manage what you cannot control and you cannot control what you cannot measure”

W. Edward Deming
**Define a Few Terms and Words**

* **CMMS**
  * Computerized Maintenance Management System

* **Backlog**
  * Organized list of lower priority work requests waiting for the opportunity to complete

* **Wrench time**
  * Value added time and effort spent completing work requests
Define a Few Terms and Words

* Work Order Quality
  * Accurate and detailed completed work requests document

* Proactive Work
  * All work which is not reactive or emergency

* Reactive Work
  * Work completed without advanced notice and little or no planning and scheduling
* What is Labor Utilization or Wrench Time?

What it is **not**!

* Looking for Parts
* Looking for Equipment
* Waiting for Supervision
* Waiting for Instructions
* Waiting for Approval
* Looking for Work
* Excess Personal
* Travel Time - Doing the Above

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XXXXX

* xxxxxxxx
* What is Labor Utilization or Wrench Time?

What it is!

* Hands-on Time
* Time Spent Turning Wrenches
* Trouble Shooting
* Calculating
* Measuring
* Job Clean-Up
* Travel Time to and From the Job
* Properly Completing Work Request Documentation
## Where the Maintenance Dollar Goes

<table>
<thead>
<tr>
<th>Activity</th>
<th>Minutes</th>
<th>% of 8-hr Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting instructions</td>
<td>21</td>
<td>4</td>
</tr>
<tr>
<td>Picking up tools and parts</td>
<td>25</td>
<td>5</td>
</tr>
<tr>
<td>Travel</td>
<td>77</td>
<td>16</td>
</tr>
<tr>
<td>Waiting on machine</td>
<td>22</td>
<td>5</td>
</tr>
<tr>
<td>Late starts/early quits</td>
<td>21</td>
<td>4</td>
</tr>
<tr>
<td>Excess personal time</td>
<td>35</td>
<td>7</td>
</tr>
<tr>
<td>Idle time</td>
<td>44</td>
<td>9</td>
</tr>
<tr>
<td>Miscellaneous losses</td>
<td>78</td>
<td>16</td>
</tr>
<tr>
<td>Sub-total</td>
<td>323</td>
<td>67</td>
</tr>
<tr>
<td>Available to turn wrench</td>
<td>157</td>
<td>33</td>
</tr>
</tbody>
</table>

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Where the Maintenance Dollar Goes

- Get Instructions
- Get Tools
- Travel
- Wait on Machine
- Late Start/Early Quit
- Excess Personal
- Idle
- Misc Losses
- Available for Wrench
Best in Class Organizations
Maintenance Utilization

* 40% Wrench Time
* 70-80% of All Work is Planned
* 60% of All Work is Scheduled
* 20-30% of All Work in Reactive or Emergency
* Supervision is on Floor or in Field 50-60% of the Time
What kind of data do you need?

* 100% of Labor Hours Charged to Work Order
  * Meetings, training, shop time, travel, work hours, etc. Minus breaks and lunch
* Hours Charged to Assets and Equipment not Buildings
* Number of Technicians Per Job
* Actual (accurate actual) Hours to Complete Each Job
What Kind of Data do You Need?

* Work craft
  * Electrical
  * Mechanical
  * HVAC
  * Instrument

* Work type
  * Safety
  * Corrective
  * Emergent
  * Preventive
  * Capital or project
* What Kind of Data do You Need?

* Fault or Failure Code - What Caused the Failure
  * Operator error
  * Moisture
  * Overload
  * Lack of lubrication
  * Etc...

* Planned Hours
  * Hours the job was originally planned for
What do You do With Your New Found Data?

* Determine Which Assets or Equipment is Using Most of Your Maintenance Time
* Discover How Accurate Your Work Planning Process is
* Determine How Reactive Your Culture is
* Discover the Quality of Your Weekly Work Scheduling Efforts
* Understand How Parts and Supplies Help or Hurt Labor Efficiencies
Measurements Used to Highlight Inefficiencies

- Planned vs. Actual Man-hours
- Schedule Compliance
- Perato Analysis of Reactive Work
- Travel Time Analysis
- Backlog Trends in Quantity
- One Person Jobs Compared to All Jobs
- Percent Reactive Work Compared to All Work
Michael Cowley, President

CE Maintenance Solutions, LLC

* Established CE Maintenance Solutions, LLC, in 2004 to provide training, coaching and consulting services to facility and manufacturing organizations

* 30+ years of hands-on experience in production maintenance and facility engineering fields

* My Mechanical Engineering education as well as my extensive experience gives me an unusual insight into how organizations work

* My fundamental understanding and knowledge of the components and the culture needed helps me to properly structure, organize and maintain a World Class maintenance organization

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Questions

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