INTERNATIONAL OPERATIONS & MAINTENANCE CONFERENCE
IN THE ARAB COUNTRIES
UNDER THE THEME
“MANAGING MAINTENANCE WITHIN INDUSTRY 4.0”
CONCIDE WITH THE 16TH ARAB MAINTENANCE EXHIBITION

STEPS OF MAINTENANCE CONSULTANCY

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Content

Introduction
Main business
Consulting structure
Software
Value adding
Introduction of our Consultancy

Vision
To be the leader of smart maintenance

Strategy
Focus to maintenance, create value for enterprise through consulting + software service.

Mission
Take root into factory
Serve factory
Promote factory

Quality Policy
Scientific, deliberate accurate service

Respect, Identity, Caring, Sharing, Gratefulness, Responsibility
Our Consulting Team

More than 30% with English consulting experience

Headed by Prof. Li Baowen, and Xu Baoqiang, with rich theory and experience

100% full-time consultant;

More than 40% with 20 years plant experience;

More than 90% consultants with more than 2 different backgrounds

Proportion of more than 10 year experience

80%
Service Scale

Cover 31 provinces, more than 300 cities

Proportion of trades

- Association
- Electronic
- Metallurgy & steel
- Industrial service
- Metro
- Mechanic Energy
- Petrochemical
- Food & Beverage
- Tobacco & Pharmacy
- Instrument
Some Clients

- Metal
- Tobacco
- Appliance
- Motor
- Petrochemical
Some Clients
Our Academic Partners

- Guangzhou University
- China Mechanical Association
- International Maintenance Association
- European Maintenance Associations
- O & M in Arabic Countries
A penetrating study on maintenance issues is the precondition for an excellent maintenance consultancy.

We publish 1 or 2 books each year

**Works on Maintenance**

- Published more than 50 books on maintenance
- Total publish quantity up to 1 million copies;
- 《The Man-Machine System of Enterprise》 was published by American Academic Publisher, in English.
The Main Structure to put our Commendation or System into Practice

- **Standard Process**: Implement through a normalized process
- **Personnel Training**: Personnel training is from the beginning to the end
- **Improve the index**: Solve the problem
- **Improve KPI is the target**
Main Steps of consultancy

2. Framework Design
Analyze the data, different options, recommend the most appropriate options or solutions along with an implementation roadmap and expected outcomes, and obtain an acceptance decision by the client.

3. Master Plan
Includes execution roadmap, schedule, process execution content, milestone, phase audit, resource commitment, responsibility of constancy and clients, change control, risk and quality management, KPI outcomes measuring.

4. Template Offer
The clients are divided into 3 levels, for the lowest, the consultant should offer some feasible tools or template to help them carry out the issue of management such as standard, process, diagram or flow chart. For the highest, some creative space should be remained for them.

5. Homework Review
In each phase of service, the consultant should assign some homework for clients to fulfill, and make a review, check the progress next time. If some changes or difference appear, the consultant should solve them by sufficient communication and resource calling.

6. Audit Phase by Phase
After each consulting phase, including the closure of the project, following content should be audited: phase target fulfilled, process or plant effectiveness, team performance, client satisfaction, as well as the innovations.
Mature Project Execution Flowchart

Framework Forming

Remote communication Meeting Site Investigation

Investigation

Achievement Phase Check & Acceptance Meeting

Effect Evaluation Client Check & Accept

Achievement Summary

Process Review Audit Review

Phase Review

Phase Acceptance

Effect Evaluation Client Check & Accept

Project Closure

Total Evaluation

Contract Accomplish Evaluation

Audit from consultancy

Audit from client

Final check and acceptance

Project closure meeting

Status & Problem Analysis Countermeasure Design Consultancy Design Expected Result Design

Start and Execution

Kick off Meeting Schedule Design Organization Design On site and face to face Coaching Problem Solving Improvement Suggestion Client Evaluation and Tail after
Main Business: Direct the Life Circle Maintenance Management
Main Business: Implement TnPM System

**Total**

The foundation of TnPM
Life circle maintenance management involved by all departments and all levels

**Productive**

Main target of TnPM
Related to all KPI, such as OEE, TEEP, MTBF, MTTR, as well as the ROI of maintenance, from input to outcomes

**Normalized**

Carrier of TnPM
From standard to another, from one norm to another, penetrate into the blood capillary and nerve endings

**Maintenance**

The concept and process of TnPM
Combination of autonomous maintenance and professional maintenance, combination of internal and outsourced team

TnPM——20 Years Practice，20 years Innovation
Main Business: Implement TnPM System

- Maximized efficient
- Multi-task, multi-skill
- Combination of AM & PM

- Improve the personality
- Improve the shop floor
- Improve the competence

- AM
  - Norm
  - 6H

- PM
  - CI
  - 6S
  - Diamond team
  - 6I
  - Craftsman training
  - 6E
  - Safety Manage
  - 6Z
  - Audit
  - Safety
  - Moral
  - Systemized
  - Standardized
  - Simplified

- Production
- Quality
- Cost
- SOON
- Improve the competence

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Main Business: Implement TnPM System

- AM
- MAIN. DESIGN
- NORM SYS.
- CI

DIAMOND TEAM SAFETY MAINTENANCE. AUDIT CRAFTSMAN TRAINING
Our Consultancy is supported by our Information System

- Smart Inspection
- Repair & Overhaul Management
- Optimized Lubrication Sys.
- Contract Maintenance Management
- Autonomous Maintenance
- Six Headstream Management
- Maintenance Knowledge
- Failure Management Sys.
- Smart Spare parts Management
- Interactive Maintenance Manual-IETM
The Total Framework of Information System

3D Reality

Supplier M.
Check, Acceptance
Purchasing
Asset Plan
Investment

Fixed Asset
Test Running
Installation
Installation Test

Operation
Maintenance
Repair
Life Circle Management

Policy & Target
Organization
Knowledge M.
FORG-Training
Statistics
Cost Control
CI

Policy
Target
KPI
Enterprise Info.
Department Info.
Staff Info.
Responsibility
Contract M.
Tech. File
Institution M.
Oper. Standard
Failure Manual
Knowledge Tank
Low, Regulations
Plan & Resource
Exe. & Eva.
OPL
3D Condition M.
Operation Rd.
Special Equip. M.
Energy M.
Visual M.
6S, 6H M.
Shifting M.
Instrument M.
Risk M.
Status M.
Asset Inventory
Asset Depreciation
Standing Book
PDA inspection
Lubrication
Time Based Fitting
Daily Fitting
Accurate Inspect
Professional Ins.
Daily Inspect
Maintenance Policy
RCSP
Repair Analysis
Spare parts
Outsourcing
Opportunity M.
BM
PM
M. Strategy

Check Acceptance
Execution
Tendering
Approve
Project M.

Check Acceptance
Execution
Tendering
Approve
Project M.

Discard Treatment
Execution
Tendering
Approve
Project M.

Scrape Approve

Knowledge Tank
Low, Regulations

OEE
3 High 1 Long
MTTR/MTBF
Failure Rate
Perfect Rate
Inventory Rate
Trend Analysis

Cost Statement
Cost Analysis

Energy Sys.
Budget Sys.
OA
E-MAIL
We Chat

Interface: HR Sys., ERP, SAP, MES, Energy Sys., Budget Sys. OA, E-MAIL, We Chat......
Information System will satisfy all level’s Requirement

- Condition Monitoring, Operation Data Collection Analysis
- Shop-floor Management
  - Inspection Management Close Circle
  - Checking, Maintain, Lubricating
  - Standing Book, Maintenance Management, Failure Management
  - Improving Suggestions, 6S, OPL, 6H Management
  - Team Performance, Knowledge Management
- Middle Level Staff
  - Asset Management
  - Maintenance Plan
  - Spare parts Management
  - Failure Management
  - Standard Management
- Top
  - KPI Index
  - Synthetic Control Board
  - Maintenance Audit

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Value Creating

The improvement of KPI of maintenance, especially, the progress of ROI;

KPI and Index

The optimize of system and institution solidified by document;

System

The obvious promotion of the team member’s quality;

Human Resource

The following progress of QHSE.

Other Aspects
Achievement of service

KPI improvement (Case of a steel mine)

<table>
<thead>
<tr>
<th>Before Implementation</th>
<th>After Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lubrication circle prolonged</strong></td>
<td><strong>A</strong> 2000小时</td>
</tr>
<tr>
<td><strong>Power lowered</strong></td>
<td><strong>B</strong> 2.86kw/t</td>
</tr>
<tr>
<td><strong>Failure rate lowered</strong></td>
<td><strong>C</strong> 0.82%</td>
</tr>
<tr>
<td><strong>Outcomes increased</strong></td>
<td><strong>D</strong> 6408T</td>
</tr>
<tr>
<td><strong>Operability increased</strong></td>
<td><strong>E</strong> 86.62%</td>
</tr>
<tr>
<td><strong>Transportation rate</strong></td>
<td><strong>F</strong> 64.34%</td>
</tr>
</tbody>
</table>

- A: 2000小时
- B: 2.86kw/t
- C: 0.82%
- D: 6408T
- E: 86.62%
- F: 64.34%
Consultancy Service Audit

**Process**
- Process Effectiveness
- Process Improvements
- Total Achievement of the Project

**Innovation**
- Innovation (development of new services)
- New systems and Concept
- New Methodologies

**Mobilizing**
- Team Performance
- Utilization of Resources
- Team Building and Mobilizing

**Staff**
- Level of OPL and OPS
- Promotion of Skills
- Capability to solve problems
- Satisfaction to the Project
Our Organization

Shareford Consulting

- Guangzhou Shareford: Consulting, Training, Auditing
- Shareford Int. (HK): Overseas Project
- Shenyang Shareford: Consulting, Training, Auditing
 Evaluation from our Clients

**Erdos Power & Metallurgy**  
Vice President Mr. Ji Xiaochun

We have the confidence to Shareford, it is an innovation to implement TnPM and related information system for our power plant and metallurgy plant. From 3 year’s striving, the progress both from KPI and employee are all obvious.

**Hengan Group**  
Assistant CEO & Chief manager of CI, Mr. Li Guang

Hengan is the biggest paper for daily use manufacturer in China. TnPM is feasible for the new operating mode of our group. After 2 year’s implementation, we set up the confidence to Shareford. The foundation has established and many aspects is in progressing. It is helpful also to smart manufacturing of our group.

**Qinghai Salt Lake Corporate**  
Vice CEO Mr. Yu Qiuping

The level of maintenance management is increased a lot after we cooperate with Shareford. It is important to carry out our target, to build up a first class garden of magnesium, lithium, and potassium in the world.
Evaluation from our Clients

Q & A

THANKS

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Thanks

Questions and answers!

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Specialty comes from dedication
Excellency hails from creation
Leader of Smart Maintenance

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