



15th INTERNATIONAL OPERATIONS & MAINTENANCE CONFERENCE IN THE ARAB COUNTRIES
UNDER THE THEME: “**SMART MAINTENANCE**” CONICIDE WITH THE 15TH ARAB MAINTENANCE EXHIBITION

Achieving Efficient Asset Maintenance through ISO 55000

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Outline for Presentation

- Background to Problem situation
- Solutions: How ISO55000 fits in?
- Hindrance to ISO55000 adoption.
- Benefits and Advantages of ISO55000 implementation
- Recommendations and conclusions



What are we trying to achieve?

Improved O&M Efficiency:

- Integration between planning and operations
- Benchmarking performance

Improved Business Performance through:

- Understanding levels of service
- Ensuring Consistency in Planning
- Capacity to deliver
- System Integration

Risk Management:

- Better understanding of Corporate risks, (incl Planning, Preparedness, response & recovery)

Governance Framework:

- Linking organisational objectives to organisational capacity
- Measuring organisational performance

Sustainability of the Business outcomes:

- Condition (and performance)
- Asset knowledge



Factors that Influence effective maintenance

- **Labour skills**
- **Labour commitment**
- **Job planning**
- **Workload management**
- **Cost control**
- **Equipment condition**
- **Reliability and maintainability**
- **Logistic support systems**

Effective maintenance ensures that the equipment is capable of doing what it was designed to do, when required.



Effective Asset Maintenance

- Conducting an inventory of all assets.
- Leveraging reliability techniques in the development of maintenance.
- Requirements and schedules.
- Prioritizing and scheduling life- cycle activities.
- Revise plan in response to new information.



Reasons for Poor Maintenance

- Senior managers lack relevant knowledge and maintenance experience.
- Absence of maintenance education.
- Maintenance budgets are inadequate or ineffective.
- Organizations regard maintenance as a cost center rather than a business center.
- Maintenance often remains isolated, with little integration with the functions of other departments.



ISO 55000 Series of Standard

ISO 55000

- Overview, principles and key terms in Asset Management

ISO 55001

- Asset management: management systems – requirements

ISO 50002

- Guidance for implementation of ISO 55001

ISO 55000 is primarily for organizations who consider improving the realization of value for their organization from their asset base.

Scope of ISO 55001

Organisational Context

- Requirements/expectations of stakeholders (**what do they WANT us to do?**)
- Issues that affect the businesses ability to achieve intended outcomes (**What do we have the Capability to do?**)

Leadership

- Leadership and Commitment to AM
- AM Policy (intent)
- Responsibilities/authorities assigned & communicated
- Alignment w corporate and strategic goals

Planning

- Setting the Corporate/Strategic goals
- Plans and objectives that convert strategic outcomes to business and tactical action at all levels
- Identifies and addresses risk
- Communication and engagement

Operations

- Control the process to deliver targeted outcomes across all functions (Service delivery, Maintenance, Capital delivery)
- Consider how outsources activities are controlled and integrated.

Support

- Provide resources (skills, IT, \$)
- Maintain or capability (competence)

Performance

- Monitoring, measurement, analysis and evaluation

Improvement

- Suitability, adequacy and effectiveness of AMS

A vertical strip on the left side of the slide shows an industrial setting with large white storage tanks, a complex network of pipes, and a worker in a red jumpsuit and white hard hat. The entire slide has a light red tint.

Key Definitions

ISO 55000 define:

Asset as a “thing, an item or an entity that has actual or potential value” to an organisation.

Asset Knowledge: operational knowledge of an asset allows asset managers and management to make accurate business decisions.

Asset Criticality: ISO 55000 requires that a strategic approach should be used to determine the criticality of assets. Organization must have list of all assets to be manage.

A vertical strip on the left side of the slide shows an industrial scene with large white storage tanks, a network of pipes, and a worker in a red jumpsuit and white hard hat. The image has a reddish tint.

Principle behind ISO 55001

- It is a management systems standard, not a technical specification.
- Users want to optimize the value of physical assets across their life-cycle.
- Following the process will link asset management to technology, human, risk and financial management.
- Formal links between assets, asset management and asset management systems need to be established.
- A “line of sight” needs to be established through all levels of the organization.

Asset management is not about the assets, it's about the management of assets.

A vertical strip on the left side of the slide shows an industrial scene with a worker in a red jumpsuit and white hard hat working on a complex network of pipes and machinery.

ISO 55000 influence in Maintenance

- Life cycle management plan.
- Continual improvement.
- Preventative action.
- Competent personnel.
- Clear asset management strategy.

ISO 55000 states that the preferred methods for managing assets should be stipulated as part of the strategic approach to decision-making



Achieve Asset Integrity

- Matching assets with service delivery needs.
- Managing assets within available resources and legal/technical requirements.
- Ensuring assets are fit for purpose and aligned with organisation policy objectives.
- Organisation adopting a lifecycle approach to planning asset investment and management decisions
- Monitoring, evaluating and improving the performance of assets.
- Ensuring informed decision making through adequate asset information, including asset condition, existing and alternative asset use.



Benefit of Asset Maintenance strategy with ISO 55000

- Substantial improvement of asset reliability.
- Lower costs of servicing assets.
- Greater uptime and availability.
- Less downtimes and outages.
- Higher return on assets as well as in invested capital.
- More Efficient and Effective Training.



Challenges in Adopting Standard

- Obtaining unwavering support of “Top Management”
- Employee resistance to change (Many department will say “I’m different”)
- Lack of understanding of ISO 55000 system
- Constraints on resources (manpower, time and finance)
- Time needed to achieve value realization
- Lack of training and education of employees
- Demonstrating value against the expense of certification
- Possibly new technological and data requirements

A vertical image on the left side of the slide shows a worker in a red jumpsuit and white hard hat working on a complex network of pipes and machinery in an industrial setting, likely a refinery or chemical plant.

Perceived Challenges from Companies

- A lack of time to implement a complete system
- A structured approach may require plans and actions which are rigid and unable to 'flex' to the demands of production schedule changes
- A regime change to a developed risk based strategy requires an accurate history of maintenance and production data, this is lacking in many companies
- An intelligent infrastructure is required, this has raised further questions on terminology and meanings, therefore a clear and unambiguous set of instructions are required.



Organizational Reform

- Authorization of asset structure and accountability for the assets.
- Monitoring of current state of the assets.
- Formulation of strategies for asset maintenance.
- Selection of an appropriate method for introduction of the asset management plan.
- Inspection of asset information and data.
- Incessant monitoring and appraisal of efficiency of asset.



Organisational Requirements

- Introduce into a small pilot area
- Introduce the system on *key or critical* equipment
- Develop plans which allow for enough time to implement
- Monitor progress:
 - Data analysis
 - Life Cycle management
 - Risk Management
- Assign performance indicators to ensure the strategy is working. *Make sense of the data*

Advantages in Adopting ISO 55000

- Demonstrates due diligence and stewardship to stakeholders – “doing the right things”.
- Obtains cost efficiencies.
- Manages asset and business risk.
- Sets a common corporate-wide vision and goal.
- Sets a common lexicon and approach.
- Justifies the need for investments.
- Attracts and retains competent staff.
- Attracts investors/funding and reduces insurance rates.



ISO 55000 Benefits

- Improve return on investments.
- Demonstrating compliance by conforming to legal, statutory and regulatory requirements’.
- Improve organization sustainability.
- Enhancing the organization’s reputation.
- Improve asset investment.
- Manage risk through reducing financial losses.
- Ability to demonstrate social responsibility .



Recommendation

- Companies must have holistic asset maintenance strategy
- ISO 55000 should be implemented on **critical asset to reduce cost.**
- **Collaboration** of other **functional departments** within the organization
- **Clear statement** of asset management **objectives**
- Establish a decision-making process that reflects stakeholder need and define value.
- ISO 55000 requires everything be documented including the processes, procedures, etc



Conclusion

- ISO 55000 should be implemented on critical asset to reduce cost
- ISO 55000 is not a maintenance strategy; companies must have a holistic maintenance strategy.
- ISO 55000, which puts strong emphasis on continual improvement and preventative action.
- ISO 55000 provides opportunities to re-examine and improve asset ownership and service provider relationships, regulatory frameworks and stakeholder confidence.
- ISO 55000 remains the best choice for organizations seeking competitive advantage and profitability through improved asset integrity.



THANK YOU FOR YOUR ATTENTION