



Effective Pump Management: Who should make the final decision?

Etienne Human

What is in this presentation

Failure is one of the unfortunate facts of life.

Prof Jasper L Coetzee



- Introduction
- Problem Statement
- The Four Scenarios
 - Sourcing and Procurement
 - Equipment Maintenance Strategies
 - Operational Strategies
 - Legal Strategies
- Physical Asset Management
- Life Cycle Management



What is in this presentation

Key areas affecting maintenance sustainability is Leadership, abilities and behaviour, processes and procedures, knowledge and skills – Jannie Mostert

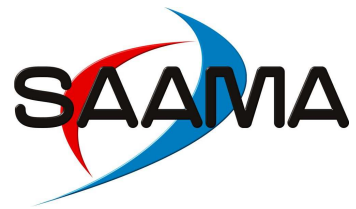


- Conclusion
 - Managerial
 - Strategies
- Solution – Comprehensive Commodity Management Plan
 - One Manager
 - Commodity Strategy
- Quotes





Introduction

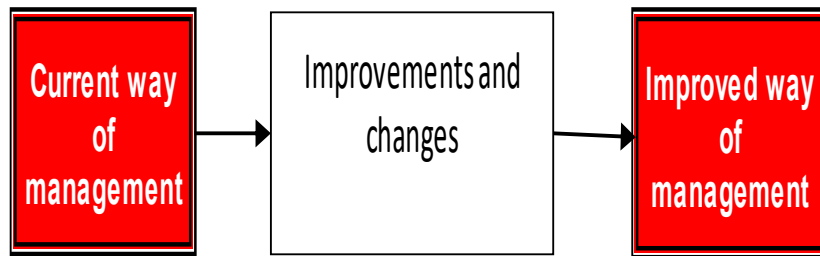


SMARTER approaches in Asset Management

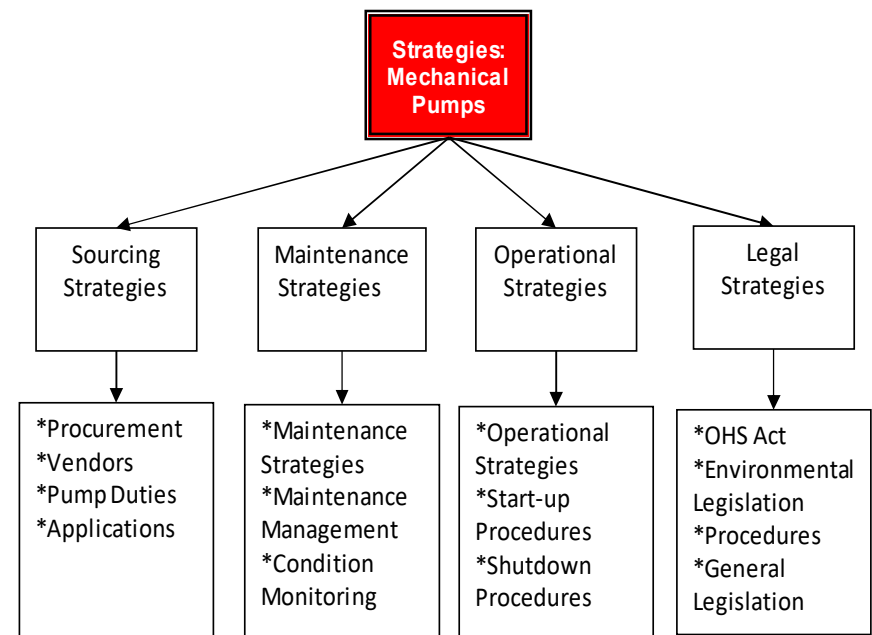


Introduction

- First presentation (2016) – Propose changes in the management of pumps.

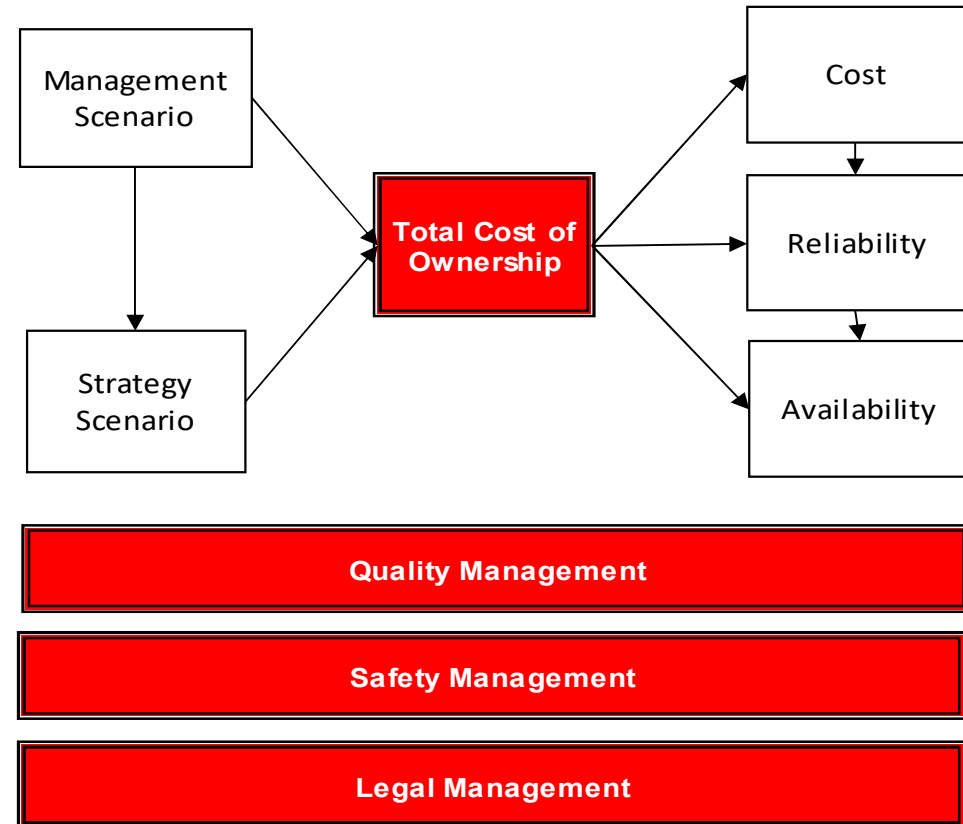


- Second presentation (2017) – Four scenarios and related strategies.



Problem Statement *(Whenever man produces equipment or tools to increase his own productivity, he also has to deal this unwanted side effect – Prof Jasper L Coetzee)*

- TCO is influenced and affected by:
 - Management
 - Strategies
- Other influences:
 - Quality Management
 - Safety Management
 - Legal Management



Problem Statement

- Managerial
 - Category Manager
 - Sourcing of the commodity (Pumps)
 - Operational Manager
 - Owner of the plant
 - Equipment on the plant
 - Maintenance Manager
 - Responsible for equipment reliability
 - Maintenance Strategies
 - Quality Management
 - Safety Management
 - Legal Management





The Four Scenarios



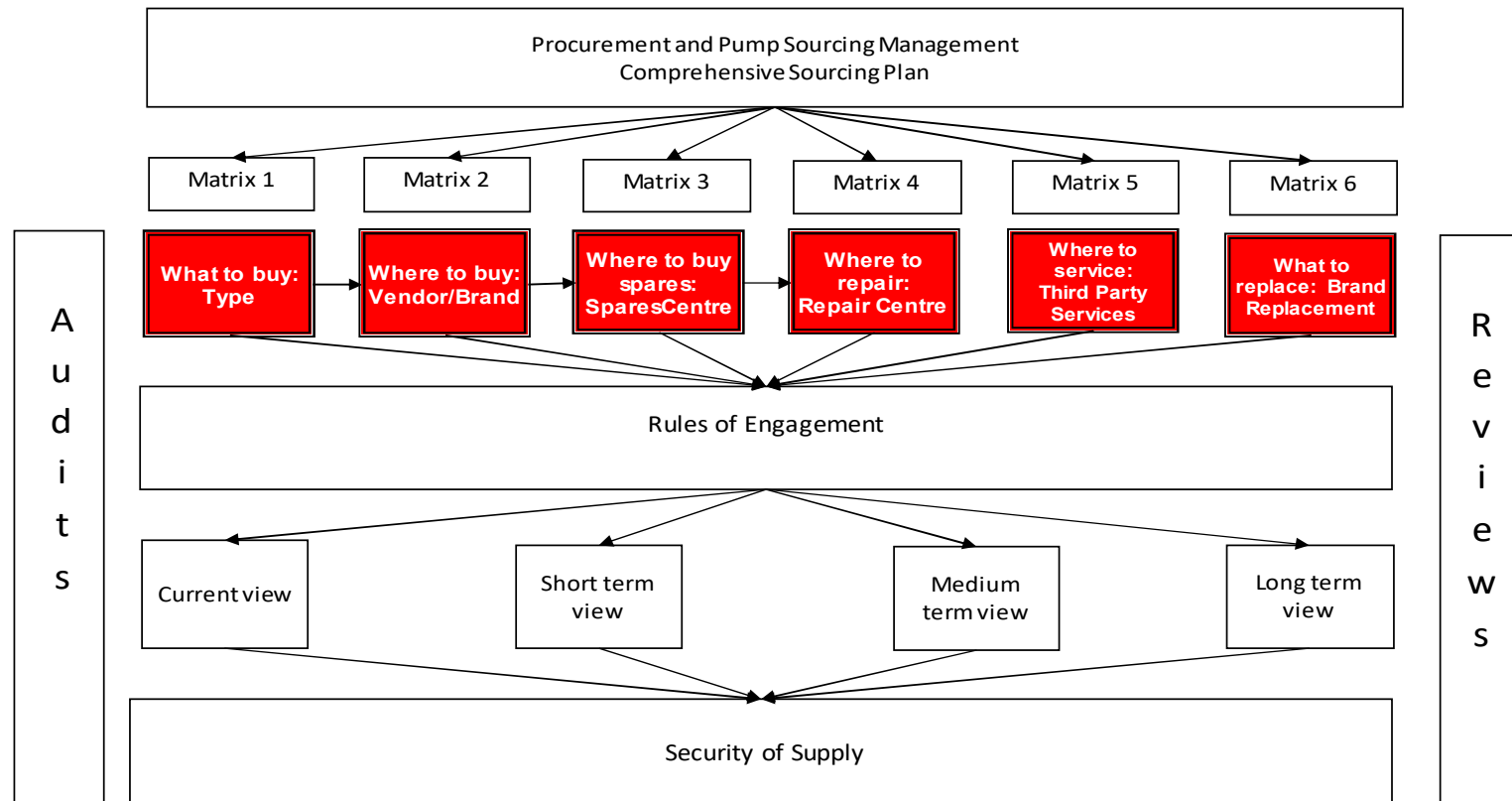
Sourcing and Procurement

- Comprehensive Sourcing Strategy - Pumps
 - A very specific strategy should be developed
 - Cater for the following different matrixes
 - What to buy (What type and brand of pump)
 - Where to buy it (The supplier of the specific pump)
 - Maintenance: where to buy spares for the pump
 - Maintenance: where to repair the pump
 - Maintenance: Third party service
 - Replacement of the pumps (Old and obsolete pumps)
 - Rules of Engagement
 - Certain Views (Current, short term, medium term. long term)
 - Security of supply (Main purpose)



Sourcing and Procurement

Main purpose – security of supply



Equipment Maintenance Strategies

- Reliability Centered Maintenance – RCM
- 1960's
 - Maintenance Steering Group – MSG
- RCM2 – John Moubray (1990's)
- Different versions of RCM (Risk Based RCM)
- New concepts
 - Sense Analysis (Petro Chemical Industry - 2005)
 - CME Analysis
 - VARCA Model (incident investigations – vibration analysis)
 - Prolizer – specific methods and applications of vibration analysis in failure investigations

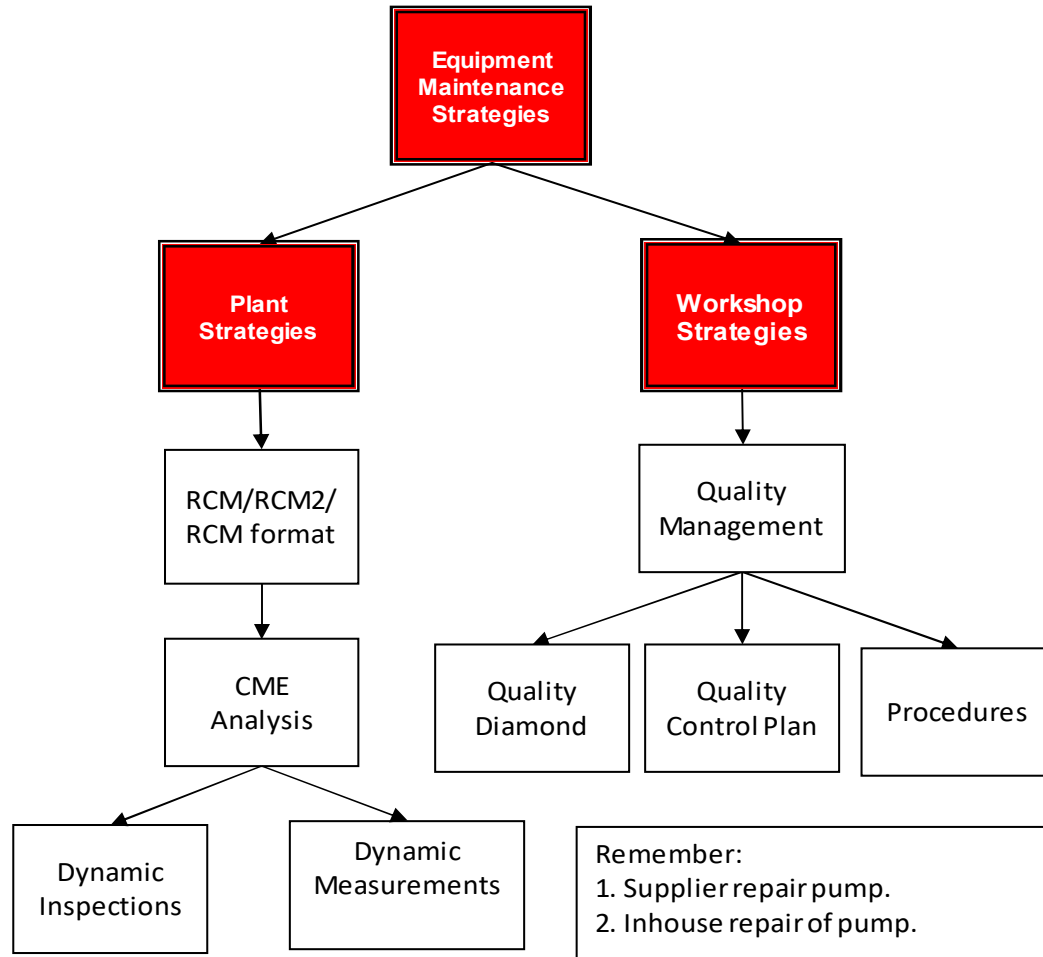


Equipment Maintenance Strategies

- Traditional Maintenance Strategies
 - Condition Based
 - Time Based
 - Operate to Failure
- New ways of the application of strategies – specifically on pumps
 - Combination of Condition Based and Time Based
- Application
 - Plant Strategies
 - Workshop Strategies



Equipment Maintenance Strategies



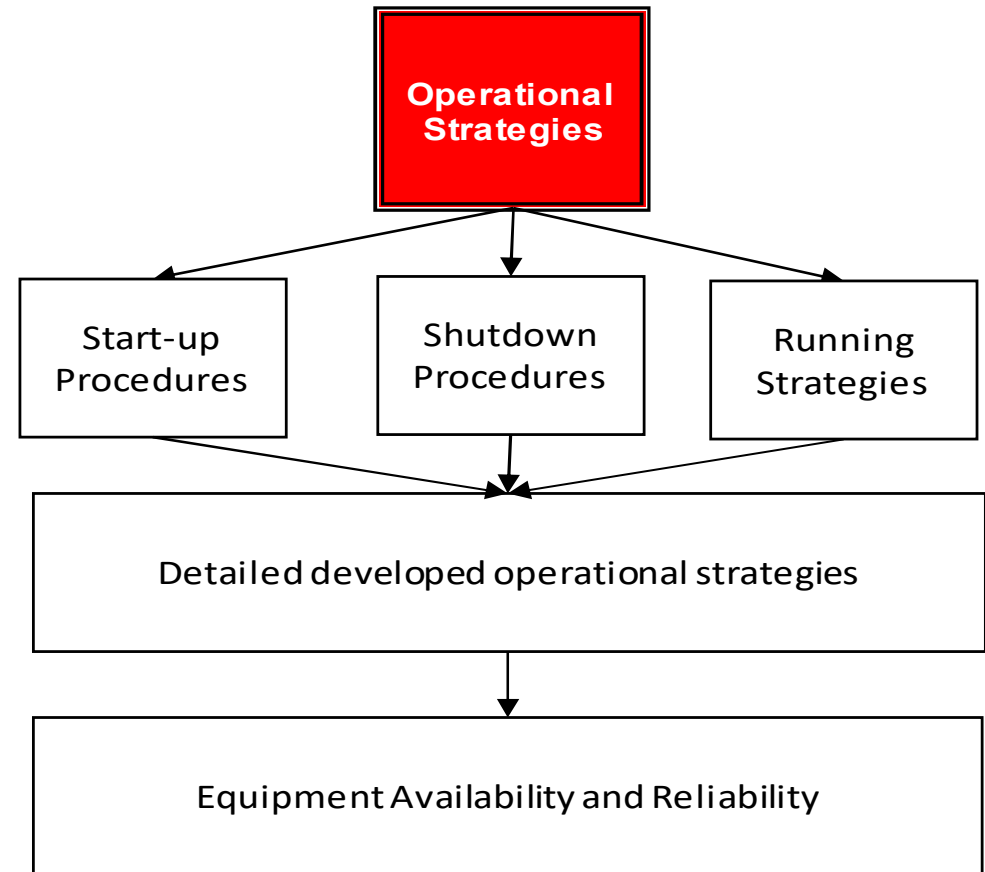
Equipment Maintenance Strategies

- Divided into two streams
 - Plant Strategies (in the plant)
 - Normal RCM methodology
 - Monitoring on running equipment
 - CME Analysis
 - Dynamic Inspections
 - Dynamic Measurements
 - Workshop Strategies (in the workshop)
 - Quality Management
 - Quality Diamond
 - QCP (Quality Control Plan)
 - Procedures (Maintenance Procedures, etc.)



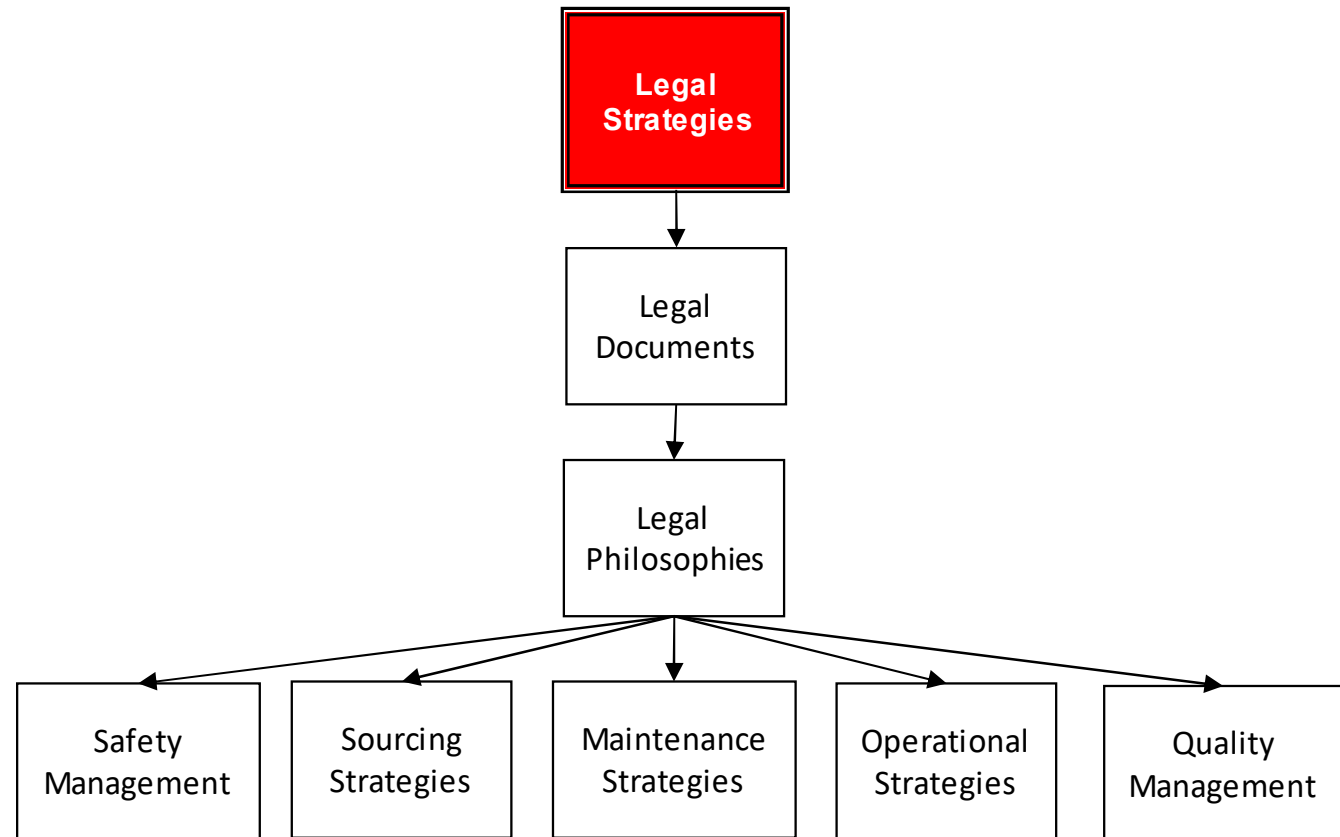
Operational Strategies

- Grey area
- Procedures
 - Start-up
 - Shutdown
 - Running
- Detailed developed operational strategies



Legal Strategies

- Need to be developed
- Safety Management
- Sourcing Strategies
- Maintenance Strategies
- Operational Strategies
- Quality Management





Physical Asset Management



SMARTER approaches in Asset Management



Physical Asset Management

*Asset
Management
focus on the
value that the
asset can provide*
– Prof Christoft
Heist



- What is Physical Asset Management
 - More than just Reliability Engineering
 - Equipment Maintenance and Asset Integrity studies
 - Equipment over the total life cycle
 - Include
 - Sourcing strategies
 - Procurement
 - Repair Replacement
 - Maintenance strategies
 - How and when





Life Cycle Model



Life Cycle Model

The biggest issues in asset management is leadership, continuous improvement, defect illumination and what systems are available – Riaan Breedt

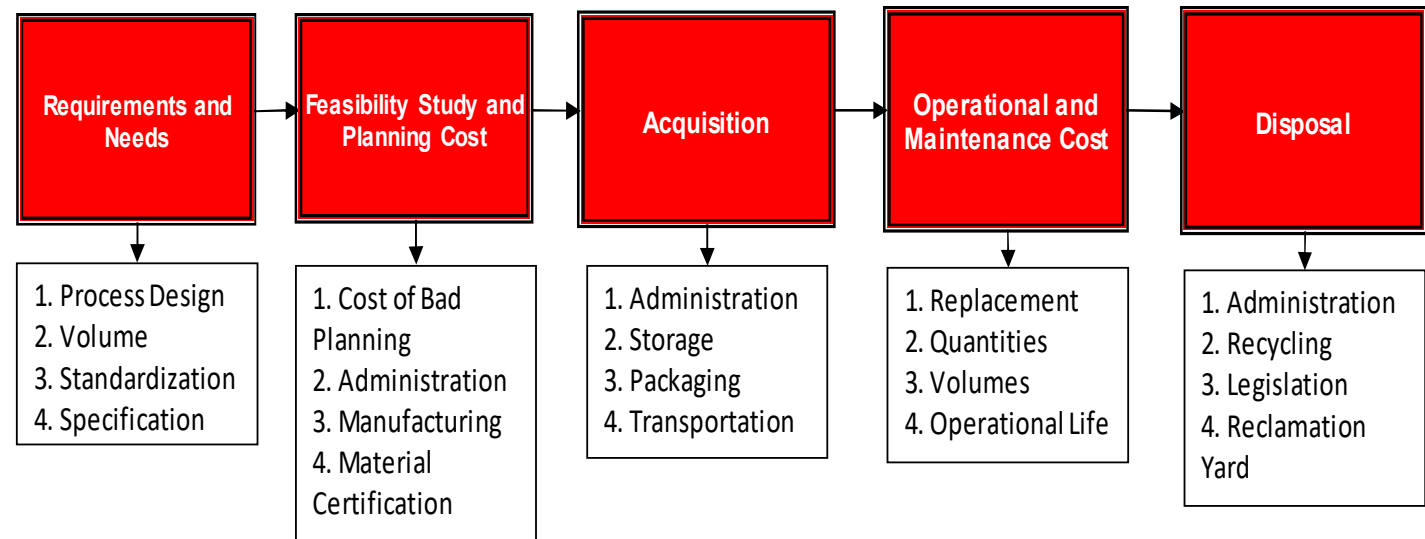


- Cost drivers from cradle to grave
- Matrix 7 on the sourcing plan
- Indication and identification of the cost and hidden cost of the specific commodity
- Indication of everything that contribute to cost



Life Cycle Model *(Asset Management focus on the value that the asset can provide – Prof Chriftoft Heist)*

- Cost drivers from “cradle to grave”
- Also indication of hidden costs.





Conclusion



Conclusion

- Managerial
 - Category Management
 - No control of spend
 - No control on the commodity
 - Maintenance Management
 - Technique
 - Technologies
 - Alignment with maintenance strategies (Operational)
 - Operational Management
 - Throughput
 - Availability of equipment
 - Grey Areas
 - Quality
 - Safety



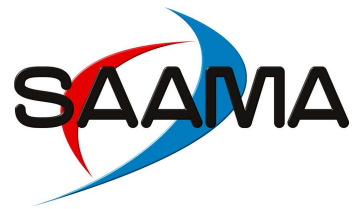
Conclusion

- Strategies
 - Sourcing Strategies
 - Not much information
 - Purchasing is randomly
 - Maintenance Strategies
 - RCM is the main method of development
 - Changed the past years
 - New maintenance and monitoring techniques
 - Operational Strategies
 - Philosophies and procedures
 - No strategies aligned with maintenance and procurement strategies
 - Legal Strategies
 - No legal strategies





Solution

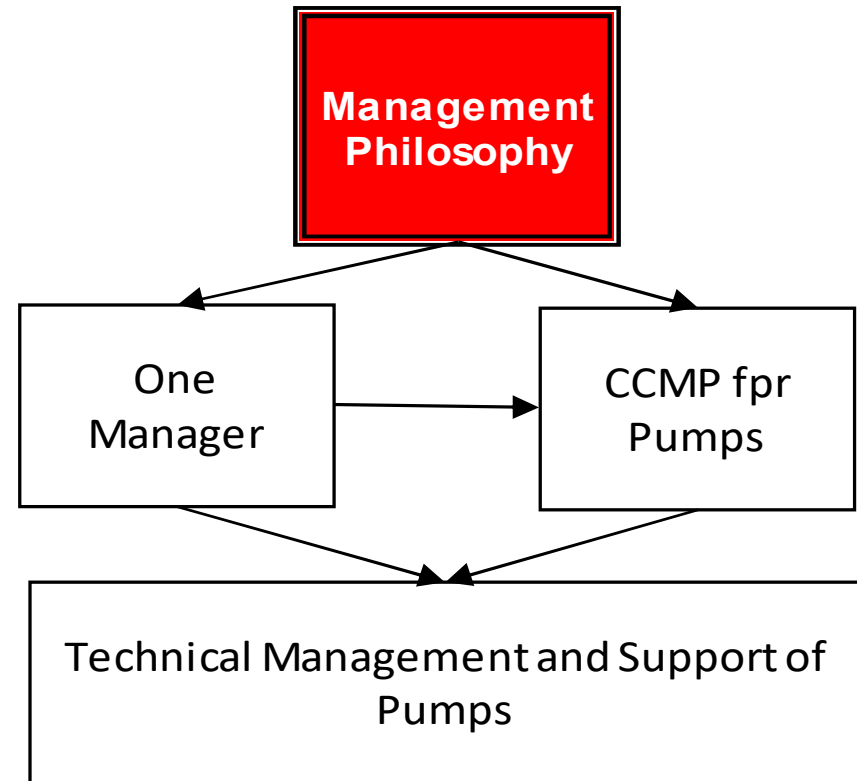


SMARTER approaches in Asset Management

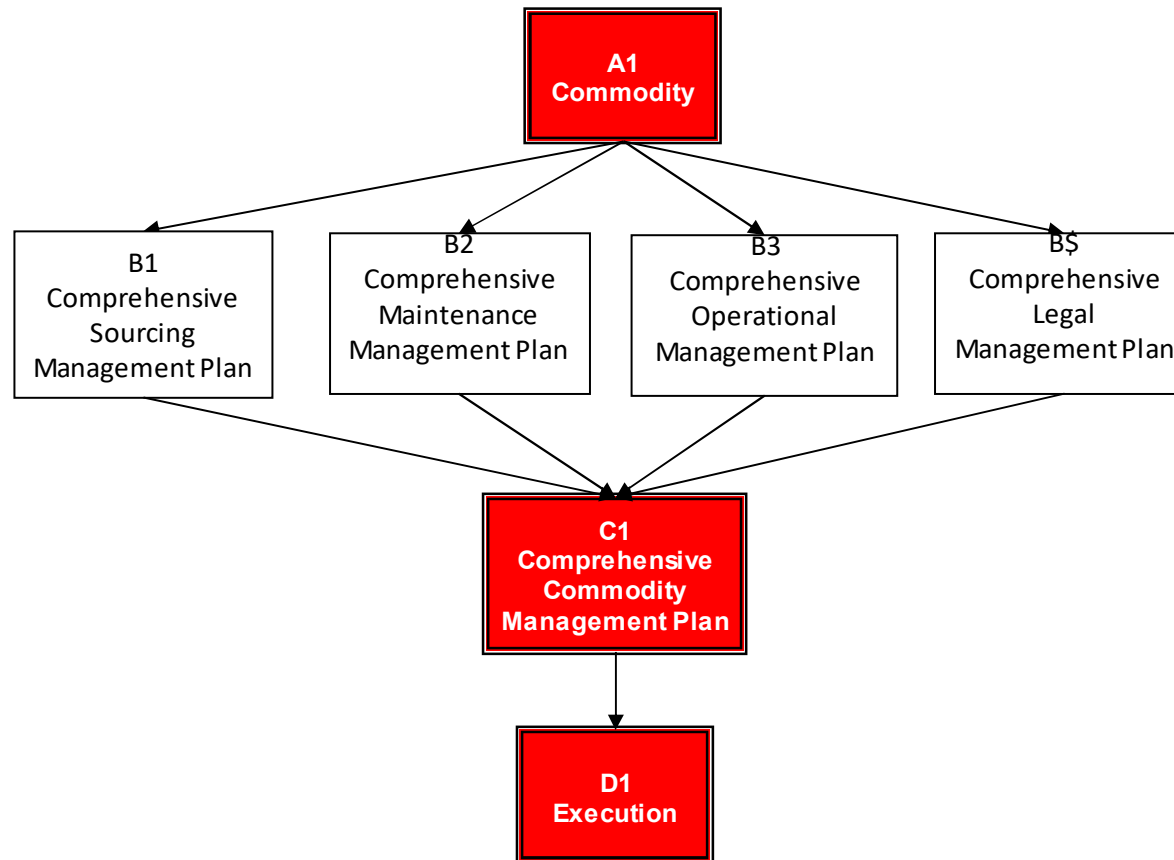


Solution: Comprehensive Commodity Management Plan

- Change the whole management system
- One Manager
- Commodity Strategy



Solution: Comprehensive Commodity Management Plan



Solution: Comprehensive Commodity Management Plan

- Document A1: Description of the commodity
 - More detail about the commodity, threads, commercial etc
- Document B1: Comprehensive Sourcing Management Plan
 - Information about procurement, spares, repairs etc
- Document B2: Comprehensive Maintenance Management Plan
 - Maintenance and asset integrity studies and strategies
- Document B3: Comprehensive Operational Management Plan
 - How to operate the equipment for the best benefit of the plant
- Document B4: Comprehensive Legal Management Plan
 - All the legal requirements and why?
- Document C1: Comprehensive Commodity Management Plan
 - Outcome of the whole plant
- Document D1: Execution Plan
 - How to execute the strategy to other parts of the business
 - Final document of the whole plan or strategy



Quotes

- *Failure is one of the unfortunate facts of life* – Professor Jasper L Coetzee (University of Pretoria)
- *Key areas (4 key areas) affecting Maintenance Sustainability is:*
 - *Leadership*
 - *People abilities and behaviors*
 - *Business system processes and procedures*
 - *Knowledge and skills*
 - Jannie Mostert – (PhD candidate at University of Pretoria)
- *Whenever man produces equipment or tools to increase his own productivity, he also has to deal with this unwanted side effect* – Prof Jasper L Coetzee (University of Pretoria)
- *Asset Management focus on the value that the asset can provide* – Prof Christoft Heist (University of Zurich)



Quotes

- *The biggest issues in asset management is leadership, continuous improvement, defect illumination and what systems are available – Riaan Breedt (RCMi – Reliability Centred Maintenance Improvements)*
- *Leadership maturity is focusing on:*
 - *People development (start focusing on people)*
 - *Production (start getting results)*
 - *Permission (use influence)*
 - *Position (person using his position to get things done)*
 - John Maxwell (International Leadership Specialist and Consultant)





Thank You

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