POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

FACILITIES AND MAINTENANCE MANAGEMENT

Achieving Optimum Facilities Performance

TS. RAJA NURUL WAHEEDA RAJA ZILAN
SR NOREZAN ASMANGI

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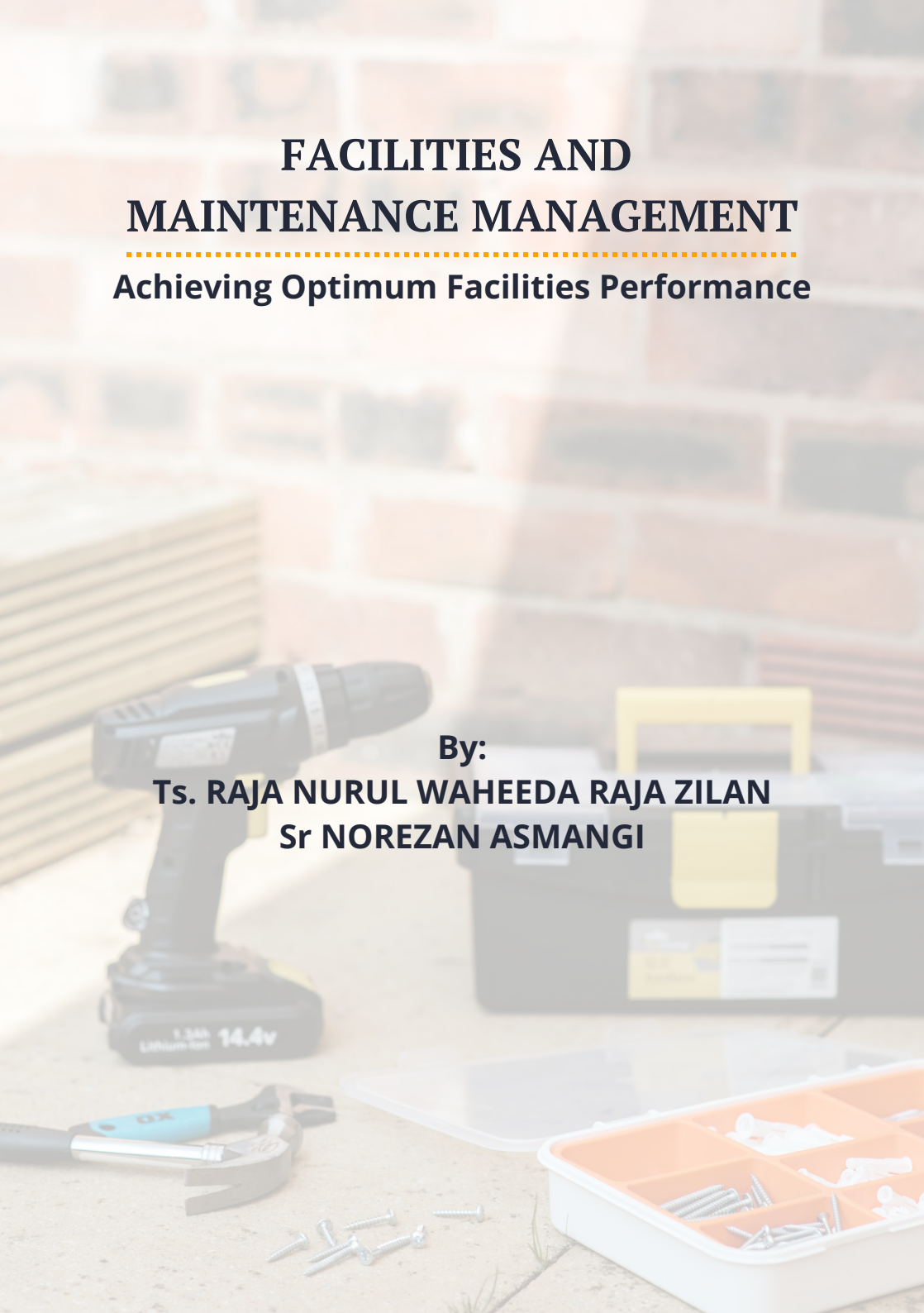

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PREFACE

A major role of facilities management is ensuring the useability, reliability, and safety of the asset being managed. Like facility management, the scope and extent of maintenance management responsibilities differs from one organization to the next.

Maintenance work in a facility management setting typically consists of performing simple preventive maintenance and responding to service requests. Improving maintenance management should be a continuous goal for any company with machine assets, but there is no one-size-fits-all solution.

This e-book comprehensively explained the elements and aspects involved in facilities and maintenance management, and suggest methods in which maintenance strategy might be applied to facility management activities.

TS. RAJA NURUL WAHEEDA RAJA ZILAN
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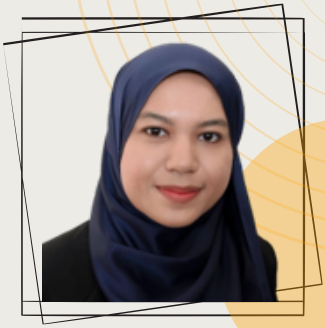
AUTHOR'S BACKGROUND



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1 INTRODUCTION TO FACILITIES AND MAINTENANCE MANAGEMENT

DID YOU KNOW?

The Malaysia Facility Management Market size is expected to grow from USD 13.98 billion in 2023 to USD 18.31 billion by 2028, at a CAGR* of 5.54% during the forecast period (2023-2028).

***THE COMPOUND ANNUAL GROWTH RATE (CAGR) IS THE RATE OF RETURN (ROR)**

OVERVIEW OF
Facilities Management

FACILITIES MANAGEMENT INVOLVES COORDINATION, DELIVERY, AND MANAGEMENT OF BUILDING SUPPORT SERVICES THAT IMPACT OPERATIONS.

According to the **International Facility Management Association (IFMA):**

"Facility management (FM) is a profession that encompasses multiple disciplines to ensure functionality, comfort, safety and efficiency of the built environment by integrating people, place, process and technology."

Facilities management duties focus on the building (hard) and people (soft), and work to bring them together in a way that benefits operations.

SCAN ME

SCAN QR CODE TO WATCH VIDEO:
INTRODUCTION TO FACILITIES
MANAGEMENT BY IFMA

IFMA'S DEFINITION OF *Facilities Management*

PEOPLE

Involves managing people so as to get the best out of them, motivating them to be productive and retaining their expertise (minimising staff turnover). It also extends to processes to ensure customer satisfaction.

PROCESS

Involves robust strategies to deliver value for the organisation. This could range from defining the most appropriate procurement strategy to employing operational best practices and compliance to legislation and regulation.

PLACE

Involves providing the most conducive working environment. This focuses on workplace design (close or open concept design; usually referred to as flexible workplace), spatial planning and so on.

TECHNOLOGY

Refers to the use of IT to enhance FM services provision. From an enhancing element, however, technology is now a key component to effective FM service delivery. Tools such as CAFM and BIM are some of the innovative technologies used in FM practice today.

OVERVIEW OF
Maintenance Management

MAINTENANCE MANAGEMENT IS THE PROCESS OF MAINTAINING AN ASSETS AND RESOURCES WHILE CONTROLLING TIME AND COSTS, ENSURING MAXIMUM EFFICIENCY OF THE ASSETS.

WHY MAINTENANCE MANAGEMENT IS IMPORTANT?

Improved employee and asset productivity
Maintenance management system helps identify faults and fix them before break down, ensuring every human and asset is safe, healthy, and productive.

Lower operational costs
Regular maintenance maximizes asset lifetimes by keeping them running the way manufacturers intended, reducing the chance of unexpected failures and costly downtimes.

Improved asset life cycles
It is to ensure that every asset delivers its desired function and lives out its lifespan with minimal operational costs.

SCAN ME

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BUILDING MAINTENANCE
MANAGEMENT

OBJECTIVES OF MAINTENANCE MANAGEMENT

Maintenance is performed out not only to fix damaged assets but also to extend the life of the asset.

- **Making asset reliable**
- **Minimizing maintenance cost**
- **Decreasing downtime**
- **Minimizing failure**
- **Enhance productivity level**
- **Comply with rules and regulations**
- **Improve operational safety**
- **Improve customer satisfaction**
- **Minimize frequency of interruption**
- **Maximize useful life of asset**
- **Minimize repair time and cost**
- **Improve quality of product and services**

SCOPE OF WORK IN MAINTENANCE MANAGEMENT

- BUDGET MANAGEMENT
- CONTRACTOR MANAGEMENT
- ASSET MANAGEMENT
- PEOPLE MANAGEMENT
- WORK PLANNING & ORGANIZATION

The main goal of maintenance management is to improve asset availability and reliability to maximize the efficacy of the company's core services.

IMPACT OF POOR MAINTENANCE

ABSENCE OR POOR PERFORMANCE OF MAINTENANCE MANAGEMENT IN AN ORGANIZATION IS ACCOMPANIED BY NEGATIVE IMPACTS.

ADDITIONALLY, THE AFFECTED ORGANIZATION WOULD SUFFER A SIGNIFICANT FINANCIAL LOSS AND A LARGE EXPENDITURE TO FIX THESE NEGATIVE CONSEQUENCES.

EARLY DECAYING OF BUILDING

Building will decaying prematurely, rotting without any good use as the public is not willing to make such facilities sustainable.

NON-OPERATIONAL USE OF ASSET

Non-Operational asset are defined as assets being held by an organisation but not directly occupied, used or consumed in the delivery of services, or for the service or strategic objectives of the authority.

INCREASED BUDGETS FOR UNTREATED MAINTENANCE FAULT

Deferred maintenance of asset creates expenditures backlog that should be covered in future.

REDUCES THE VALUE OF THE BUILDING

Deferred maintenance results in the asset to physical depreciation, losing its initial value due to the postponement of maintenance.

The cost for planned repairs are low compared to emergency maintenance and the emergency maintenance usually occurred during peak production hours. Hence, reactive repairs need to be performed as soon as possible for production to resume quickly (Matse et al., 2022).

Regular maintenance is essential to keep equipment, machines and the work environment safe and reliable.

2 EVOLUTION OF OPERATION AND MAINTENANCE

WHAT IS OPERATION & MAINTENANCE?

OBJECTIVE

Facilities operations and maintenance encompasses a broad spectrum of services, competencies, processes, and tools required to assure the built environment will perform the functions for which a facility was designed and constructed.

HISTORY

In the past, during the facility design/build phases, it was uncommon to devote substantial resources to life-cycle Operation and Maintenance (O&M) concerns. However, it is now widely recognized that O&M represents the greatest expense in owning and operating a facility over its life cycle.

ACTIVITY

Operations and maintenance typically includes the day-to-day activities necessary for the building/built structure, its systems and equipment, and occupants/users to perform their intended function.

Operations and maintenance are combined into the common term O&M because a facility cannot operate at peak efficiency without being maintained

OPERATION VS MAINTENANCE: DECIDING BETWEEN SIMILAR TERMS

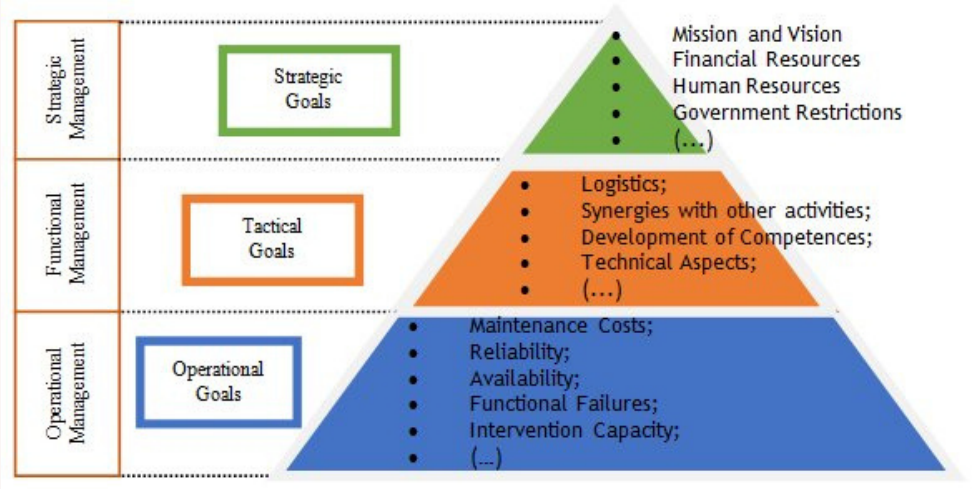
While both are essential for ensuring the smooth functioning of the equipment, they refer to different aspects of the process.

DEFINITION

OPERATION refers to the process of using the equipment to perform its intended function. It involves turning it on, running it, and turning it off when the task is complete. Operation is the process of making the equipment work, whether it's a machine, a fan, or a computer.

MAINTENANCE refers to the process of keeping the equipment in good working condition. This includes regular checks, cleaning, and repairs to ensure that the equipment functions properly. Maintenance is essential to prevent breakdowns and extend the lifespan of the equipment.

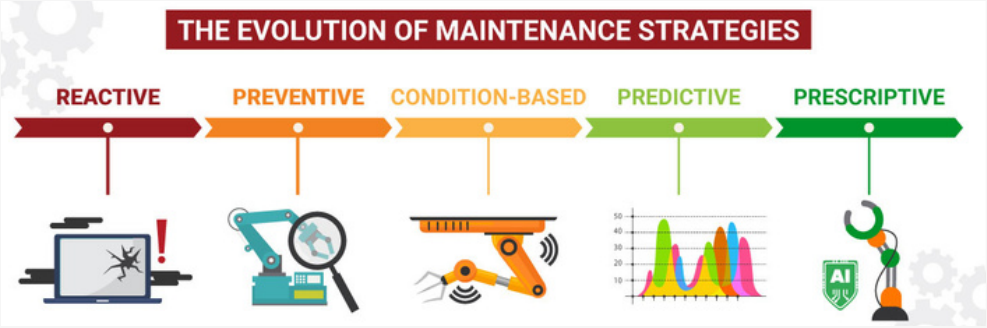
LEVELS OF MAINTENANCE MANAGEMENT



Organizational Levels of Maintenance adapted from Abreu & Piedade (2018)

Maintenance is the combination of all technical, administrative and managerial actions during the life cycle of an item intended to retain it in, or restore it to, a state in which it can perform the required function (Tubis & Werbińska, 2015)

THE EVOLUTION OF MAINTENANCE STRATEGIES



MAINTENANCE OVER THE YEARS

First Generation 1940 – 1955

1. Fix it when it broke
2. Basic and routine maintenance
3. Corrective maintenance

Second Generation 1955 – 1975

1. Planned preventative maintenance
2. Time-based maintenance
3. System for planning and controlling work

Third Generation 1975 – 2000

1. Condition-based maintenance
2. Reliability-centered maintenance
3. Computer-aided maintenance management and information system
4. Workforce multi-skilling and team working
5. Proactive and strategic thinking

Current Generation 2000+

1. Predictive maintenance
2. Focus on good-quality data
3. Preventive maintenance
4. Reliability-centered maintenance
5. Using technology to connect systems, software, and people
6. Aligning operations and maintenance

MAINTENANCE FOCUS 2023: EFFECTIVE & VALUE ADDED MAINTENANCE

ARTIFICIAL INTELLIGENCE

These technologies enable the real-time analysis of huge amounts of data, allowing for the identification of patterns and trends that can be used to forecast when equipment is likely to fail.
This enables more precise and timely maintenance, boosting overall reliability and reducing downtime.

INTERNET oF THINGS (IoT)

The Internet of Things (IoT) will become more important in predictive maintenance. Sensors and smart meters, for example, can collect real-time data on equipment performance.
This data is then useful to identify potential issues and plan maintenance before failures occur.

IMMERSIVE TECHNOLOGIES

Platforms such as augmented reality (AR) and virtual reality (VR) make it easier for maintenance to conduct on-site inspections.
This immersive technologies can improve on-the-spot visualisation and enable early defect detection.

EXAMPLE OF OPERATION AND MAINTENANCE

Determine 5 (FIVE) examples of operation and maintenance work in facilities management industry.

Name: _____ Session: _____

Matric No.: _____ Date: _____

OPERATION VS MAINTENANCE

Choose the correct term (**operation or maintenance**) to fill in the blank in each of the following sentences:

Deciding Between Similar Terms

QUESTION 1

The company's _____ costs have increased due to the aging equipment.

QUESTION 2

Regular _____ of the machinery can help prevent breakdowns and extend its lifespan.

QUESTION 3

A hospital needs to ensure the smooth _____ of its medical equipment to provide quality care.

QUESTION 4

A construction company needs to ensure the _____ of its heavy equipment to avoid accidents.

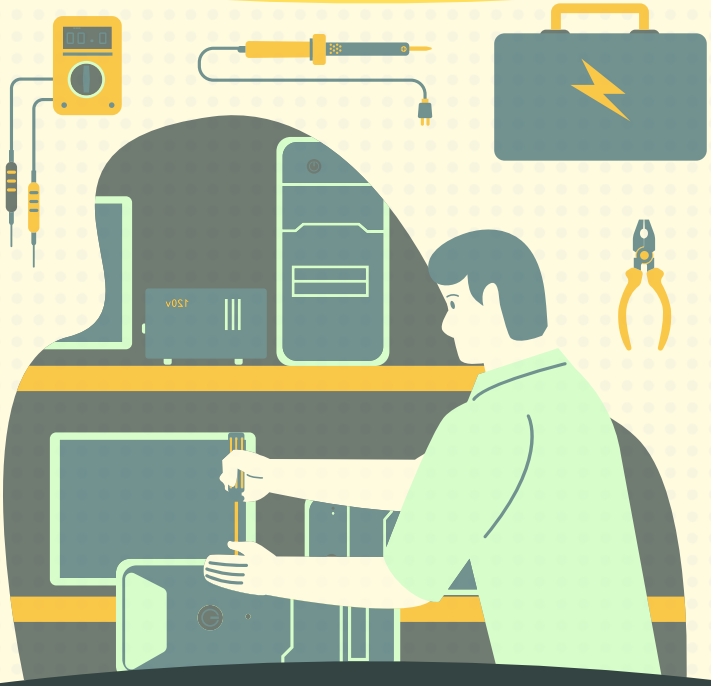
CONCLUSION

It is important to understand the distinction between these two terms in order to communicate effectively and avoid confusion. Operation refers to the process of using something, while maintenance refers to the actions taken to keep something in good condition.

3 MAINTENANCE MANAGEMENT SYSTEM

INTRODUCTION TO MAINTENANCE MANAGEMENT SYSTEM

" Software platform designed to simplify maintenance operations and produce status reports and detailed summaries of maintenance activities" (Noria Corporation 2023)



"Saves time and money by properly managing the maintenance of assets efficiently and effectively"

(Facility Force, Incorporation 2023)

WHAT IS MAINTENANCE MANAGEMENT SYSTEM?

The Maintenance Management System (MMS)is a reporting system designed to track daily maintenance activities

SYSTEM THAT CENTRALIZES MAINTENANCE INFORMATION AND FACILITATES THE PROCESSES OF MAINTENANCE OPERATIONS

WHY IS SYSTEM MAINTENANCE IMPORTANT?

"System maintenance is the process of keeping a company's technology infrastructure, equipment and software running smoothly and efficiently. It is a crucial aspect of running a business as it ensures the smooth functioning of all the systems that the company depends on to carry out its operations. "
(*Rehan A. IT Specialist, 2023*)

1

IMPROVED PERFORMANCE

Updating software, inspecting hardware, and fine-tuning system settings are examples of routine maintenance operations that can help fix performance issues and boost productivity.

2

INCREASED UPTIME

By doing routine system maintenance, it may lower the chance of unplanned downtime, increasing system availability and uptime—both crucial for satisfying client and consumer demands.

3

ENHANCED SECURITY

Regular system maintenance can assist in locating and resolving system vulnerabilities, preventing security lapses and safeguarding sensitive data.

4

COST SAVINGS

Long-term cost reductions can be achieved with proactive system maintenance and regular maintenance to detect any problems before they become costly malfunctions, which reduces the need for last-minute repairs or replacements.

5

COMPLIANCE

By ensuring that a company's systems adhere to these requirements, regular system maintenance can help lower the risk of financial or legal repercussions.

BENEFITS OF IMPLEMENTING MAINTENANCE SYSTEMS

IMPROVED EQUIPMENT RELIABILITY

- Identifying potential issues early, reducing breakdowns and downtime

COST REDUCTION

- Enable proactive maintenance, reducing emergency repairs and associated costs.

ENHANCED SAFETY

- Regular maintenance improves the safety of equipment and facilities.

INCREASED ASSET LIFESPAN

- Implementing maintenance systems can extend the lifespan of assets.

BETTER PLANNING AND SCHEDULING

- Maintenance systems facilitate efficient planning and scheduling of maintenance activities.

REGULATORY COMPLIANCE

- Maintenance systems help organizations meet regulatory requirements, avoiding fines and legal issues.

INCREASED PRODUCTIVITY

- Reduced downtime and improved equipment performance.

TYPES OF MAINTENANCE MANAGEMENT TECHNOLOGY SYSTEM

CWORKS

A cloud-based CMMS platform that helps manage schedule, track and manage maintenance activities on a unified location

CAFM

Designed to help users manage the various assets, tools and processes that affect business continuity

ARCHIBUS

An Integrated Workplace Management System platform developed by Archibus, Inc.

IWMS

Specializes in asset maintenance, space management, real estate planning, as well as project and sustainability management

CMMS

Software that helps manage assets, schedule maintenance and track work orders.

TOMS

To manage and control asset maintenance in facility maintenance, plant maintenance and lastly fleet maintenance

Name: Session:

Matric No.: Date:

Explain **FIVE** (5) Benefits of **MAINTENANCE MANAGEMENT TECHNOLOGY SYSTEM** (MMTS) in facility management fields.

CONCLUSION

System maintenance management serves as a proactive approach to risk mitigation, ensuring that critical processes and services remain uninterrupted, ultimately contributing to increased customer satisfaction and stakeholder trust.

Name: Session:

Matric No.: Date:

MAINTENANCE MANAGEMENT TECHNOLOGY SYSTEM (MMTS)

Answer the question below and fill in the blank in each of the following sentences:

1 ..... is the primary goal of a Maintenance Management Technology System (MMTS)?

2 Routine maintenance is the primary purpose of a Preventive Maintenance program to ..... within an MMTS?

3 The primary goal of a CMMS is ....., such as work orders,....., and preventive maintenance scheduling.

4 Implementing maintenance systems can extend ....., reducing the need for costly replacements.

5 Proactive system maintenance and ..... to detect any problems before they become costly malfunctions.

DID YOU KNOW?

The effective system maintenance management is a critical component of ensuring the longevity, reliability, and performance of any technological infrastructure or software system. The primary objective of such management is to minimize downtime, reduce operational costs, and enhance the overall efficiency of the system.

4 EFFICIENCY OF MAINTENANCE MANAGEMENT SYSTEM

Strategic maintenance, by definition, must be aligned with the company's vision. It shifts according to the main objectives, focuses on the condition of buildings, and makes the best use of the available resources to deliver a satisfying customer experience.

WHAT IS MAINTENANCE MANAGEMENT EFFICIENCY?

Efficiency is defined as "the amount of effort necessary to deliver what's required". Maintenance efficiency, then, is the ability to make the least amount of effort for maximum impact on the company's broader objectives.

OPERATIONAL EFFICIENCY

According to McKinsey's "Planning to fix: improving maintenance efficiency, maintenance is often overlooked in favor of production."
This compromises preventive maintenance plans, which are then executed and scheduled haphazardly.

ADVANTAGES OF REACTIVE MAINTENANCE

- Lower initial costs: There are no upfront costs for maintenance planning, preventive maintenance procedures, or the purchase and implementation of predictive maintenance technologies.

- Less planning: Since maintenance is performed only when a failure occurs, less time and resources are spent on planning and scheduling regular maintenance tasks.

- Simplicity: Reactive maintenance is straightforward because it involves fixing problems as they arise. There are no complex schedules or preventive measures to follow.

EFFECTIVE PREVENTIVE MAINTENANCE

1

COMPARE PREVENTIVE MAINTENANCE HOURS TO EVERYTHING ELSE

Preventive maintenance, if the right technology is available) should take most of the time.

2

KEEP YOUR PREVENTIVE MAINTENANCE PLAN COMPLIANCE AT 90%

To avoid an enormous backlog, match planned tasks to technicians' skill sets and optimise inventory (more on that in a minute) to make sure things run on time.

3

PLAN BASED ON A CRITICALITY MATRIX

Use a criticality matrix and leverage the company's objectives to decide which assets should focus on.

4

FOCUS ON SPECIFIC FAILURE MODES

Focus on specific failure and improves the early detection of common failures, and repairs can be made before they affect the operation.

EFFECTIVE PREVENTIVE MAINTENANCE

5

SET UP CONDITION-MONITORING PLAN BASED ON A CRITICALITY MATRIX

Around 30% of preventive maintenance is unnecessary (over-maintenance), and should be avoided with condition monitoring.

6

PICK THE RIGHT METRICS FOR PREDICTIVE MAINTENANCE (PDM)

Based on company goals, choose the best candidates for PdM, keep it simple with a few meaningful metrics, and develop algorithms to predict failures.

7

IMPLEMENT TOTAL PRODUCTIVE MAINTENANCE (TPM)

TPM enlists every worker to maintain their own equipment, empathising proactive and preventive maintenance.

MANAGING INVENTORY

1

IMPLEMENT A TAGGING SYSTEM

With new technologi (eg: NFC tags or even QR Codes), use a tags to update maintenance logs easily and keep track of w ork orders and inventory in real-time.

2

KEEP DOCUMENTS ACCURATE

keep your work orders and documents accurate with register parts usage on software and deduct quantities from stock lists automatically.

3

ANTICIPATE INVENTORY NEEDS

use maintenance logs to estimate demands and anticipate inventory needs and also set a minimum stock quantity alert and plan the orders.

4

BUILD DETAILED BILLS OF MATERIALS (BOMs)

Prepare detailed BOMs and record in the software provide to find out what organizations need to keep in stock and compatible with what, which improves inventory and ready makes all the difference when an emergency happens.

5

MAXIMISE VERTICAL SPACE

maximise vertical storage (add more levels or taller racks) and T keep inventory as close to assets as possible to decrease unnecessary motion.

TEAM MANAGEMENT

1

AUTOMATE WORKFLOWS

An Intelligent Maintenance Management Platform (IMMP) will apply machine learning and AI to automate workflows, create and assign work orders with minimal effort and no paper.

2

AVOID STRESS AND BURNOUT

Careful planning decreases stressful situations, optimises shifts, and promotes a better work/ life balance.

3

IMPROVE COMMUNICATION

Human resources should explain a goals clearly, increase transparency, learn how to give feedback – even when it's negative – and how to receive feedback.

4

CREATE A REWARD SYSTEM

Create a reward system to motiv ate teams and congratulate them when their performance hits benchmarks. Plus, remember team bonuses stimulate team spirit, something individual feedback won't do.

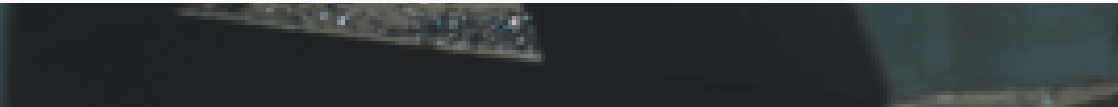
5

SEEK USER-FRIENDLY TOOLS

Swap outdated software for cloud-based, mobile tools that your technicians can use anywhere.

"Maintenance efficiency is related to productivity. It measures how successful teams are at executing particular tasks. Regarding organizational KPIs, it measures the degree to which a task can be completed within the optimal amount of time, effort, money, and other resources. "

Lekan Olanrewaju (2022)



POTENTIAL BENEFITS PERFORMANCE MEASUREMENT IN MAINTENANCE MANAGEMENT

1

Satisfying customers
- response to external pressures

2

Monitoring progress
-c**ulture promoting continuous improvement**

3

Benchmarking processes and activities
-culture promoting continuous improvement

4

Driving change
-the response to external pressures

PERFORMANCE INDICATORS TO MEASURE THE MAINTENANCE PERFORMANCE

"Centralize all your work orders on a single platform to enable real-time tracking, schedule and assign pending tasks to technicians. This will generate detailed maintenance logs that you can use to reap insights and improve plans in the future"

01
Purposes in using the Key performance Indicators (KPIs)

02
Balanced ScoreCard (BSC)

PERFORMANCE INDICATORS

03
Benchmarking in maintenance management

INTRODUCTION OF KEY PERFORMANCE INDICATORS (KPIs)

What is KPI for maintenance?

- Key performance indicators (KPIs) measure the performance of a person, department, project, or company over time, and how effective they are at

Maintenance KPIs measure how well your operation is doing at achieving its maintenance goals, like reducing downtime or cutting costs.

KPI CHARACTERISTICS

Balanced

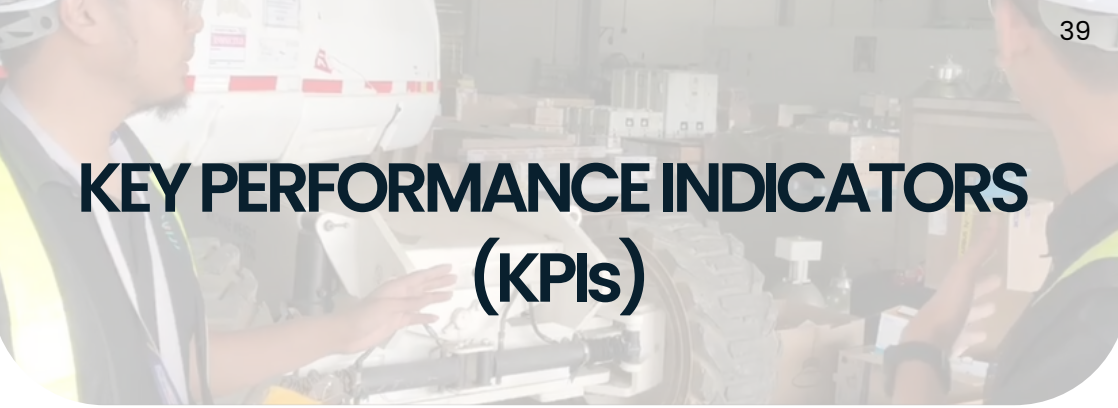
An integrated KPI system must be balanced by offering indicators that measure quality and quantity; effectiveness and efficiency; objective and subjective domains. It

Assigned to

The responsibility for monitoring and managing the feedback from KPIs within the concept of Plan Do Check Act must be assigned to specific unit/position/SO.

It must employ objective measurement methods as well as techniques that capture and report subjective opinions and reflections.

Software and automation systems could facilitate and enhance, but cannot manage or lead.



KEY PERFORMANCE INDICATORS (KPIs)

1 SET THE RIGHT KPIS.

- Pick only the right KPIs for each client and track them over time.

2 SCHEDULE COMPLIANCE

- Schedule compliance shows managers can get the work done on time, and it is one of the most relevant customer service KPIs and should share with clients.

3 BACKLOG

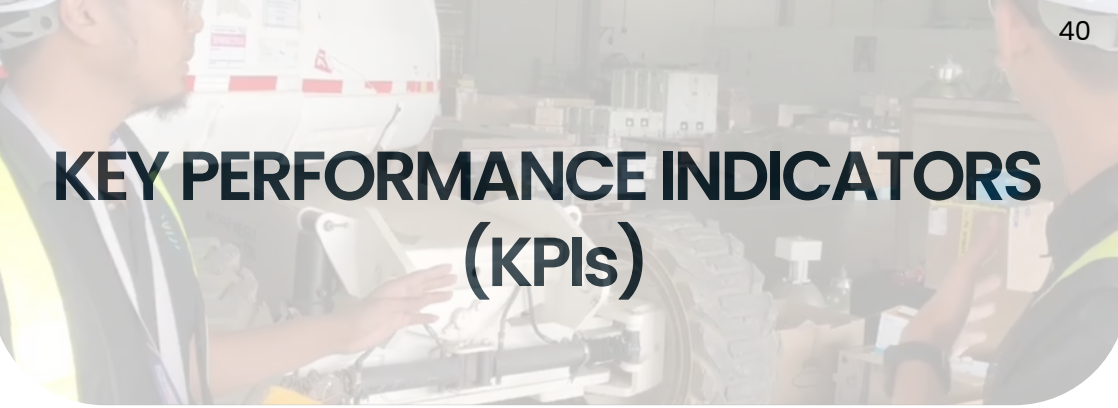
- Convert each task on the backlog into hours and then the total into weeks. A healthy maintenance backlog is two to four weeks

4 MEAN TIME BETWEEN FAILURES (MTBF)

- MTBF is one of the KPIs which can employ to judge the quality of the repair.

5 SEEK USER-FRIENDLY TOOLS

- Swap outdated software for cloud-based, mobile tools that your technicians can use anywhere.
- The repairs are top-notch and assets keep failing, it's time to cross reference with other indicators and decide whether to repair or replace



KEY PERFORMANCE INDICATORS (KPIs)

6 MEAN TIME TO REPAIR (MTTR)

- Pick only the right KPIs for each client and track them over time.

7 OVERALL EQUIPMENT EFFECTIVENESS (OEE)

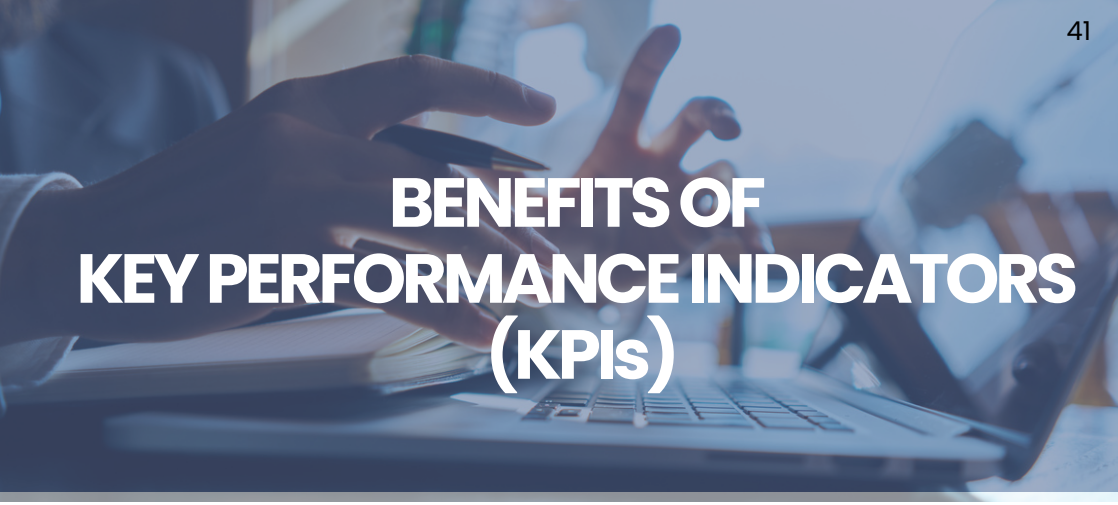
- A short time to repair means that you're reacting quickly, have the right procedures in place and are keeping equipment available.

8 OVERALL OPERATIONAL EFFECTIVENESS (OOE)

- OEE represents the amount of time that a production line is truly productive.
- A score of 100% would mean 100% availability, 100% performance, and 100% quality.

9 TOTAL EQUIPMENT EFFECTIVE PERFORMANCE (TEEP)

TEEP considers all the available time (24 hours per day, 7 days per week), so it's a great indicator of the scalability of the business in its current form



BENEFITS OF KEY PERFORMANCE INDICATORS (KPIs)

1

Increased Transparency and Accountability

- organizations with an objective view of how departments or teams perform compared to one another and other organizations in the same industry, thereby increasing transparency and accountability.

2

Improved Customer Satisfaction

- Tracking customer satisfaction through KPIs such as response time, number of issues resolved per session, or average resolution times, businesses can better understand customer needs and expectations

3

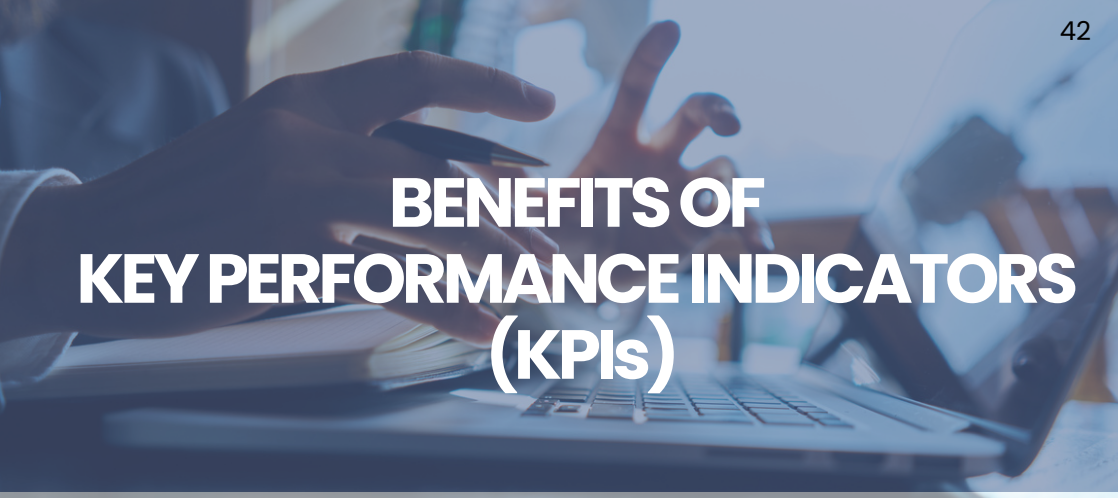
Increased Motivation and Engagement

- Change management & improvement will give motivated and engaged in achieving those goals, leading to improved performance across departments due to increased collaboration between teams.

4

Enhanced Competitiveness and Innovation

- Companies need to continuously refine their KPI data in order to promote a culture of innovation and boost their overall competitiveness.



BENEFITS OF KEY PERFORMANCE INDICATORS (KPIs)

5 Improved Decision-Making Based On Real-Time Data

- Key Performance Indicators (KPIs) furnish organisations with the requisite data and insights to enable them to make well-informed decisions, rather than relying solely on intuition or industry norms. This leads to enhanced metrics such as operational efficiency, team productivity, and resource allocation patterns.

6 Increased Accountability And Transparency

- Organizations with an objective view of how departments or teams perform compared to one another and other organizations in the same industry, thereby increasing transparency and accountability.

7 Enhanced performance tracking and continuous improvement

- Tracking customer satisfaction through KPIs such as response time, number of issues resolved per session, or average resolution times, businesses can better understand customer needs and expectations

BALANCED SCORECARD (BSC)

"The BSC integrates traditional financial measures with operational and softer customer and staff issues, which are vital to growth and long term competitiveness".

PERSPECTIVES OF BSC

1. **Customer**
   what do existing and new customers value from us?

2. **Internal processes**
   What processes must we excel at to achieve our financial and customer perspective?

3. **Learning and growth innovation**
   can we continue to improve and create future value?

4. **Financial**
   How do we create value for our shareholders? Cost reduction!

BENEFITS OF BALANCED SCORECARD

1 Increase Employee Engagement

Qualitative and well-designed balanced scorecards are an effective tool to improve employee engagement indirectly.

2 Quantify Performance Improvement and Opportunity

A well-designed, balanced scorecard quantifies performance improvement and areas of opportunity

3 Improve Communication and Alignment

Effective scorecards provide a clear and shared vision of the organization's objectives, helping to improve communication and alignment.

4 Achieve Sustained Improvement

Scorecards encourage a culture of sustained improvement by requiring a more holistic approach

5 Incentivize Employees

Incentives used in conjunction with a scorecard can help you reward high performers and encourage those who need to improve.

6 Drive Accountability

Effective scorecards link performance to the organization's overall performance and goals.

BALANCED SCORECARD

The IMPORTANCE of Balanced Scorecard in the organization

Improved Strategic Planning process

- Performance outcomes and key facilitators or drivers of future success.

Improvements to Strategy Communication and Implementation

- Identify failures and place improvements that reduce the volume of interventions needed to maintain high asset.

Increased Coordination of Projects

- The projects and initiatives are tightly focused on attaining the most important objectives.

Enhancement of Information Management

- The BSC technique facilitates the creation of key performance indicators for diverse strategic objectives

Improvements in Organization`s Performance Reporting

- Ensures that management reporting focuses on the key strategic problems and helps organizations to monitor the plan's execution.

Greater Organizational Coordination

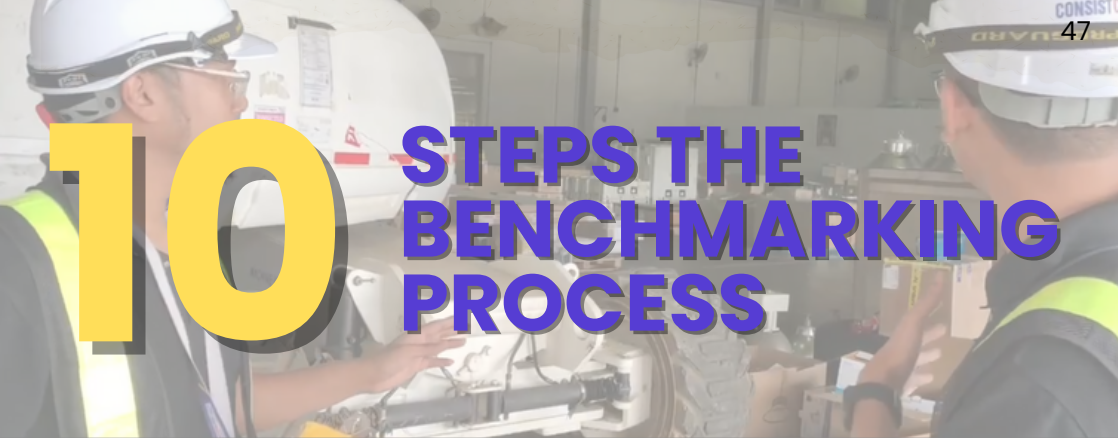
- Organizations must ensure that all lines of business and support divisions share the same objectives.

BENCHMARKING IN MAINTENANCE MANAGEMENT

"BENCHMARKING is one of the best practices for Maintenance performance measurement which is a crucial aspect of operations management, and helps to evaluate the effectiveness and efficiency of maintenance activities, identify improvement opportunities, and align maintenance goals with organizational objectives."

AI and the LinkedIn community,2023

"Benchmarking for maintenance can assist you in comparing your operational costs to those of others and could also be helpful in securing more funding support. Most FMs employ a benchmarking concept that incorporates cost, occupancy, and area data (square footage or metres) to generate normalised maintenance cost comparisons from this data."



10 STEPS THE BENCHMARKING PROCESS

1 Determine processes to be benchmarked

- **An incorrect identification could result in a waste of precious resources at later stages**

2 Determine organizations to be benchmarked

- **Identifying organizations whose adapted the requirements**
- **Determine which prospective partners truly are the benchmarks for your organization**

3 Gather data

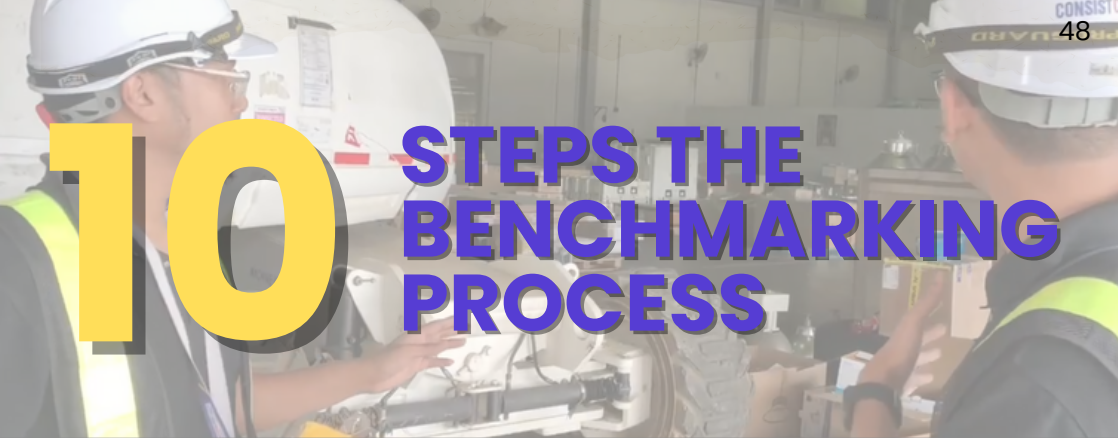
- **Creating a plan for collecting data from selected targets, conducting site visits and creating a site visit report.**

4 Analyze for gaps

- **Analyzing the data collected, discovering to what degree present performance lags and combining the best features from the best practices into an ideal process.**

5 Determine future trends

- **Examine organization's past performance in relation to its competitors, forecast potential change in related industry and project future performance, both with and without the proposed benchmarking changes.**



10 STEPS THE BENCHMARKING PROCESS

6 Reveal results and sell the process

- **Communicating the benchmarking results and their implications to significant audiences in the organization and motivating them to carry out changes.**

7 Achieve consensus on revised goals

- **Revising goals to close the performance gap determined in step 5 and achieving consensus on those goals**

8 Establish action plans

- **Management has approved the specifics of the plan, appropriate individuals have been empowered to carry it out.**

9 Implement plans and monitor results

- **Develops procedures to enable close monitoring of the changes and tracking of results. Successful elements of the new practices can be retained.**

10 Recalibrate benchmarks

- **The organization remains on the cutting edge by continuously evaluating the benchmarked practices and reinstituting the benchmarking process when necessary**

6 BENEFITS OF BENCHMARKING

1 Increased efficiency

- Identify and correct inefficient processes and procedures, resulting in better operational efficiency.

Better maintenance 2

- Identify failures and place improvements in products and processes that reduce the volume of interventions needed to maintain high asset availability.

3 Increased reliability

- Enables companies to compare product performance, efficiency, maintenance, and reliability levels with other companies' levels.

Reduced Downtime 4

- Implement effective preventive maintenance practices, enhance equipment reliability, optimize maintenance schedules and providing training to staff.

5 Use Resources

- Reducing labor expenses, negotiating better prices with suppliers, or finding more efficient ways to use resources

Enhance the quality 6

- Enhance the quality of product or services to improve customer satisfaction.

Name: Session:

Matric No.: Date:

EFFICIENCY OF MAINTENANCE MANAGEMENT SYSTEM

1 Maintenance logs is to ..... and ..... needs and also set a minimum stock quantity alert and plan the orders.

2 To avoid an ....., match planned tasks to technicians' skill sets and ..... (more on that in a minute) to make sure things run on time.

3 ..... & ..... will give motivated and engaged in achieving those goals

4 Scorecards encourage a ..... by requiring a more holistic approach

5 Implement effective preventive maintenance practices, enhance e....., and optimize maintenance schedules and providing training to staff to ensure they are ..... and resolve issues quickly.

CONCLUSION

An efficient maintenance management system is essential for any organization that wants to minimize downtime, reduce costs, and maximize productivity. By implementing a robust maintenance plan organizations can achieve its goals and improve their bottom line.

Name: **Session:**

Matric No.: **Date:**

PERFORMANCE MAINTENANCE MANAGEMENT

Determine the indicators that are used to measure the performance of a maintenance management system.

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