DominateSmartSite
Transforming the way industries work

How to Choose IoT-based CMMS Solution for Your Business?

The Next-Generation CMMS Solution

Contents

Introduction

If you're looking for your first Computerized Maintenance Management System (CMMS) solution or looking to upgrade from an existing one, the evaluation, selection, and implementation process can be a long-term strategic decision for your organization. There are many differentiating factors to consider when choosing a CMMS solution. It is crucial to go beyond marketing hoopla and get to the system's core performance and features. Not all solutions are created equally. You need to make sure it is feature-rich, flexible, robust, and designed with the latest state-of-the-art technologies. You put your business's heartbeat into a system; you should be able to rely on its accuracy, reliability, and operational excellence as your business grows.

Operational Challenges

Does any of the below challenges sound familiar? You are not alone. Almost all operations looking into adapting a CMMS are suffering from multiple of these challenges:

- Is unplanned downtime stopping your operations?
- Is your production machinery in tip-top shape?
- Can you predict when a machine should be shut down to prevent a failure?
- Do you know which assets need to be serviced this month?
- Do you have the right spare parts to service them?
- Do you have real-time visibility of your shop/field maintenance workload?
- Is your field workforce linked to real-time information for faster and better decisions?
- Do your tenants have access to your system 24/7?
- Are you still using spreadsheets to manage your maintenance operation?
- Can you effortlessly allocate the work orders to meet the daily demand changes?
- Do you meet your operation's environment, emissions, and safety standards?

What is a CMMS?

A computerized maintenance management system (CMMS) is a central hub for the organization's maintenance operation. It facilitates maintenance operations and helps maintenance workers to do their jobs more effectively. It enables the management to make informed decisions and improves the availability and utilization of physical equipment (vehicles, machinery, etc.).

CMMS systems are mostly utilized in manufacturing, construction, facility and property management, oil and gas, fleet, healthcare, sports arenas, energy, mining, and other asset-heavy industries, where asset management should be taken seriously. CMMS Implementation can be a time-saving process leading to accuracy, reliability, and operational excellence if chosen based on realistic requirements and critical concerns of the maintenance management field.

The CMMS Evolution

Spreadsheets: In the beginning, companies used to manage their repair operation on paper. They migrated to the spreadsheet, which made the task much more manageable. Although it was an improvement, the spreadsheet is not designed and fine-tuned for maintenance purposes and did not alleviate all the organization's challenges.

CMMS: A CMMS application offered many features that a spreadsheet could not. You can create work orders, assign them to technicians, and follow through until completion.

IoT-based CMMS: With the introduction of industry 4.0 as a roadmap and the advent of low-cost industrial IoT devices, the next generation CMMS is evolving to solve many challenges that an ordinary CMMS cannot.

Digitalization is transforming Maintenance Management. You can deploy up-to-date, AI-based maintenance management that drives results. The IoT-based CMMS makes your operation a smart operation and puts it on autopilot, so you can pay attention to the things that matter the most. It provides you with an immense amount of data in easy-to-understand dashboards to monitor your operation's key performance indicators. In summary, it watches your operation, so you don't have to.

In this eBook, we try to point out some of the essential key features to consider when evaluating the next generation CMMS solution.

Technology Agnostic

The next-generation CMMS should be IoT-based, and be able to work with Barcode, passive RFID, BLE, LoRa, Sensors, and GPS devices at the same time. Each technology delivers unique value to your operation, and your CMMS must be ready to help you meet your current and future challenges with ease. It is essential to ensure that the solution will not become obsolete in the future and can adapt to work with any particular type of technology without suffering compatibility issues.

Plug & Play Industrial IoT Hardware

The next-generation CMMS must be integrated with pre-configured IoT hardware designed for harsh industrial environments. The IoT hardware must be ready to use and ready to scale. The installation must be quick and easy (less than 2 minutes per device). The IoT devices should utilize long-lasting batteries to alleviate the need for an AC power connection. The solution must be designed to eliminate obstacles to achieve digital transformation and provide immediate ROI.

IT Infrastructure Requirement

The CMMS must collect and transmit an immense amount of machine data without burdening your network bandwidth. The CMMS system must operate in a harsh environment and be 100% reliable and robust and consider all possibilities that can affect its performance. It is a fact that Wi-Fi is not the most reliable communication protocol, and that there are areas where stable Wi-Fi connectivity is not available. The CMMS should be able to work completely independent of your network infrastructure (Wi-Fi or Internet). It should not have a point of failure, meaning that no data should ever be lost due to disruption in the network connectivity. The CMMS solution must be able to update the configuration of its sensor network over the air. This feature allows you to change the settings of the IoT devices remotely and while they are functioning. For example, you decide to change the motion-sensing parameters of your assets. You can centrally change the parameters, and all the designated asset tags on the network will receive the new update. Just imagine the time saved when there are hundreds or thousands of sensors and tags working at different sites.

Self-Diagnosis System

You don’t want to install a system that you have to watch. The CMMS is supposed to alleviate you of your daily burden and not add another layer of complexity. We all know hardware can

become defective. Even worse, it can function sporadically. Your IoT system must be robust and up and running without any glitches. The CMMS should have self-diagnosis tools that monitor the health of your IoT system 24/7. It should notify you if a sensor is running low on battery or has lost communication with the IoT network. The support staff should be able to view the entire IoT network in a live dashboard, diagnose the problem, and proceed with fixing the issue quickly, accurately, and efficiently. These preventive measures minimize support costs while maintaining minimal interruption to your operation.

Condition-based Preventive Maintenance

Timely preventive maintenance will maximize your equipment uptime, reliability, and availability. The question is, how do you precisely know when to perform a PM? The answer is through condition-based maintenance. Sensors attached to equipment gather real-time operational data feeding the CMMS cloud application. The CMMS should be able to use the data and automatically generate work orders and notify the maintenance personnel on the impeding PM. Another essential feature of a CMMS is its ability to track the equipment's working time. Many systems only track by odometer or by the due date. The next-generation CMMS should also track usage hours and the number of times the asset was used (ideal for equipment requiring calibration after usage).

Predictive Maintenance

The CMMS should be able to predict when a machine should be shut down to prevent a failure. The CMMS should utilize smart sensors to collect real-time equipment condition, usage, environment, and performance for predictive analysis. Predictive maintenance algorithm helps determine the condition of in-service equipment to predict when maintenance should be performed. The CMMS should send alerts to the right personnel at the right time so corrective action can be taken before the equipment breaks down.

Real-time visibility (indoor/outdoor)

We live in a dynamic world, and equipment is becoming more mobile. Real-time visibility of your assets is more critical than ever. The CMMS must be able to track your assets in an indoor or outdoor environment in real-time. It should be able to show your equipment on your indoor floor plans or world map. Imagine in the hospital environment, the benefit of knowing precisely where specific equipment (X-ray, EKG, etc.) is currently located.

Technician Dispatch

The CMMS should empower the management with real-time data to make technician dispatching based on current workload. It should be able to quickly and effortlessly assign work

orders to one or a team of technicians. The CMMS should provide the current and future technician workloads for better planning.

Work order

The CMMS should put your work order management on autopilot, so the management spends minimum efforts to manage the operation. It should auto-trigger work orders when equipment conditions (calendar date, odometer, usage hours, or the number of usage) are met. It should have a work request approval process with a complete view of spare parts inventory so you can schedule maintenance based on actual data. The work order should have estimated costs, time, and other parameters necessary for KPI analysis (estimated vs. actual).

Work Request Portal

Sometimes it is necessary for people who are not system users but are nevertheless asset users (such as equipment operators, tenants, guests, etc.) to report issues and request maintenance work to be done on equipment. The CMMS should have a Work request portal where everyone can access to request a service. The portal should be interactive and continuously update the requester with the status of their request all the way to its service completion.

Mobile Field Management

The CMMS should be 100% mobile and connect your field techs to equipment, anywhere, and anytime. It should put the full spectrum of maintenance management in the palm of everyone involved. The CMMS should alert the field tech when a new work order is assigned to him/her or an older work order detail has changed. The CMMS should be able to run on both iOS and Android operating systems.

Maintenance Plans

The CMMS should set up unlimited task lists for each type of maintenance to simplify and aid technicians when performing the service. It should also have the capability to create inspection templates for every kind of equipment.

Spare Parts Management

The CMMS should track spare parts inventory management per each site. It should allocate spare parts to each asset, groups of assets, or types of assets. It should track spare parts by manufacturer part number or supplier. Each work order should show if the spare parts are available to do the maintenance and automatically send alerts for low stock or out of stock spare parts.

Machine Monitoring

The CMMS should be able to help you increase your equipment throughput, capacity, and utilization. It should be able to retrofit your equipment (regardless of the age) with the latest IoT technology to convert your operation to a smart operation. The CMMS should be able to help you monitor your equipment remotely and know which ones are operating, idle, in-maintenance, or are down and for how long. The CMMS should help evaluate your machine's life cycle for a better financial impact on your bottom-line. It should seamlessly connect equipment with your maintenance team, production, and quality control.

Maintenance Metrics (KPIs)

The CMMS should convert your maintenance data into actionable intelligence so the management can take decisive and intelligent decisions for running an efficient operation. It must put the entire maintenance operation under your fingertips. The CMMS should provide current performance down to individual work orders or technicians and historical performance against pre-defined metrics.

Environment Monitoring

Equipment and its environment are inseparable elements that play an essential role in the operation, safety, and quality of the production. A CMMS should monitor the environment in real-time and alert personnel if a pre-defined anomaly is detected. The CMMS should be able to monitor temperature, humidity, dangerous gases, or even a leak.

Access to Digital Documents

Digital documents can be manuals, drawings, schematics, procedures, floor plans, videos, images, etc. The next-generation CMMS should have all these readily available on the technician’s mobile anywhere he goes. The technician should also easily take new photos, mark on the image, and upload them as an attachment to the work order. There should be comprehensive traceability to any work order for future reference.

Dashboards

Dashboards are called management candy for a reason. They provide a bird-eye view of your entire operation. They combine real-time data from every aspect of your operation and display relevant actionable intelligence, and help you track stats and key performance indicators (KPIs). Data should be effectively presented in a quick, easy-to-scan format with the most relevant information understandable at a glance. The next-generation CMMS should have many built-in dashboards and provide you with BI Database so you can quickly design your dashboard using Microsoft Power BI or other tools.

Multi-Site Management

You may only have one site at the moment, but you may grow and end up with multiple sites. A CMMS solution should help you manage an enterprise's maintenance operation with multiple sites and traceability of separate spare parts inventory, personnel assigned to each site, and security access of each staff. It should provide you with visibility of each location within each site and an individual work zone.

Asset Management

A foundation of the next-generation CMMS is comprehensive enterprise-level asset management. The system should allow you to know what assets you have, how many you have, and where they are located in real-time. It should enable technicians to check-out an asset or a set of tools and provide full custody tracking. It should help you to securely transfer assets among sites and track the total cost of ownership. It should eliminate the need to search for lost or misplaced assets as well as time-consuming audits. It should reduce asset-related operating costs, extend asset life, and improve ROA (return on assets). It should optimize asset utilization within and across projects. It should help you stay compliant with your corporate asset management regulations.

System Cost

The next-generation CMMS should not make you go bankrupt. After all, it should reduce your operational costs and complexities and not add to them. To achieve lower cost, the CMMS vendor must be the IoT hardware and software manufacturer instead of being a solution integrator. The CMMS vendor should offer its end-to-end solution through multiple subscription models, including no upfront cost, to help you get up and running with zero CAPEX and risks.

The Features and Capabilities of a CMMS Solution You Will Need:

Besides protecting your facility and machines against many known and unknown threats, an ideal CMMS solution can and should offer features that allow you to build a portfolio of data within your organization that you can leverage to drive success and make sure you get the highest ROI from your maintenance strategy.

Below is a checklist that you can use when evaluating a CMMS solution:

CMMS Solution

- ✓ Condition-based maintenance
- ✓ Predictive maintenance
- ✓ Auto generated work orders
- ✓ Work request portal
- ✓ Quick technician dispatch
- ✓ 100% mobile-based
- ✓ Maintenance Metrics KPIs
- ✓ Unlimited user-defined maintenance plans
- ✓ Unlimited inspection template creation
- ✓ Multi-site spare parts management
- ✓ Remote machine monitoring
- ✓ Environment monitoring
- ✓ Digital documentation
- ✓ Dashboards
- ✓ BI database for customized BI dashboards
- ✓ Multi-site maintenance management
- ✓ Advanced reporting tools
- ✓ Real-time alerts and notifications
- ✓ Integration with IBM Maximo, Power BI and REST APIs

IoT Hardware

- ✓ Technology Agnostic. Be able to work with Barcode, passive RFID, BLE, LoRa, Sensors and GPS.
- ✓ Plug & play pre-configured IoT hardware.
- ✓ Quick installation.
- ✓ Retrofit any equipment with wireless IoT device regardless of their age.
- ✓ No need for site's network.
- ✓ Long lasting battery-based sensors.
- ✓ Self-diagnosis IoT network management.
- ✓ Zero investment and risks.

Asset Management

- ✓ Cradle to grave enterprise level asset management
- ✓ Asset check-out and check-in.
- ✓ Asset transfer-out and transfer-in.
- ✓ Asset audit with missing and misplaced reporting.
- ✓ Search capability to find missing assets.
- ✓ Real-time visibility on site plan or world map.
- ✓ Tools and Kit tracking.
- ✓ Asset reservation and rental management.
- ✓ Real-time location system (RTLS).
- ✓ Real-time alerts and notifications.

Start leveraging the power of Dominate CMMS

If you are looking for a ready next-generation CMMS solution to tackle your most difficult challenges, Dominate CMMS is the one. Out of the box, it will immediately help you achieve magical results without ever becoming obsolete.

The Dominate CMMS is tailored for various industries and can support your manufacturing, property, construction, energy, utilities, mining, and heavy industries with rapid and low-cost implementation.

Dominate CMMS provides true insight into your maintenance activities and helps you manage your entire enterprise from everywhere, at any time. You can trust it to keep your assets up and running, enhance their reliability, and guarantee their safety. Leverage Dominate CMMS's powerful capabilities and features to ensure your business success now and well into the future.

About Dominate SmartSite

Dominate Smart Site is the leading global provider of industrial IoT enterprise solutions for the manufacturing, facility/property, construction, energy/utilities, mining, and heavy industries. We bring real-time visibility to all aspects of your site by wirelessly connecting your assets, machines, workforce, materials, productivity, and environment to the digital world. We are trusted by customers to connect their shop floor and field operations to enhance productivity, improve profitability, and effectively elaborate across the broad ecosystem.

DominateSmartSite

Transforming the way industries work

+1-678-387-3877

www.DominateSmartSite.com

sales@DominateSmartSite.com

facebook.com/DominateSmartSite

linkedin.com/company/dominatesmartsite